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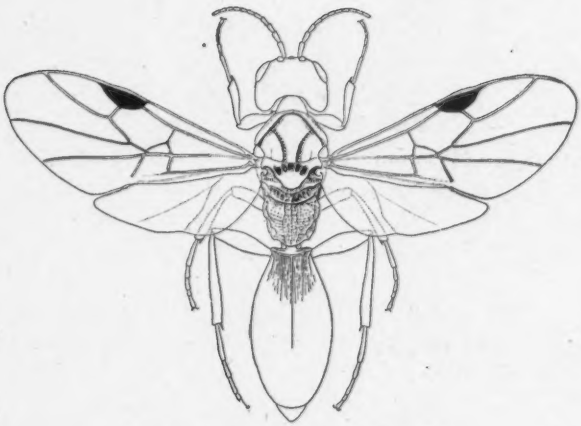

Vanhornia eucnemidarum Crawford.

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81a, 87a, 106*, 07*, 08, 09, 11, 13*, 15, 17*, 19a, 23a, 23b, 26, 31, 41, 44, 47, 48*, 51*, 54, 58, 61, 62, 63, 66*, 68*, 70*, 71, 75, 80*, 81, 82, 85*, 86*, 87*, 89*, 90, 96, 202, 03, 04, 09, 16*, 23, 29, 36, 38, 45, 46*, 47*, 49*, 50*, 52, 53, 56, 57, 60*, 63, 68, 70*, 72*, 76, 77*, 78, 79, 81, 82*, 91, 93*, 94*, 98, 99*, 301*, 03, 07a, 09*, 10*, 12, 23*, 28, 34*, 35, 36, 38*, 46, 50, 52a, 53, 54, 55*, 62, 63*, 68, 69, 76*, 77, 78*, 82*, 83*, 85*, 90, 93, 98, 99, 400*, 06, 09, 10*, 11, 18*, 19*, 22, 24, 25, 28, 29*, 30, 32, 36*, 37, 38*, 39, 42*, 43, 44*, 46, 47*, 51, 58, 60, 64, 69*, 74*, 77, 78, 79*, 80*, 88*, 89*, 90, 91, 93.

Offerata, rare species of North American Coleoptera. *Lack full set.

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A GROUP OF WESTERN ENTOMOLOGISTS.

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11. S. DOTEN, Professor Entomology, University of Nevada, Reno, Nevada.

This picture was made August 23, 1909, at the meeting of the Agricultural College and Experiment Station workers at Portland, Oregon.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XXI. APRIL, 1910. NO. 4.

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A List of the Genera Described as New from 1758 to 1909 in the Family Aphididae.

BY H. F. WILSON,

Agent and Expert, U. S. Bureau of Entomology.

This list contains as many of the genera as could be found described as new since 1758. The author takes the liberty to say that Mr. Kirkaldy in his Catalogue of Genera and List of Species described as new since 1885,* missed a number of genera and gave a few incorrect citations.

On account of the many changes in synonomy and arrangement of genera in this group of insects no effort was made to group the genera. If I have missed any citations of genera or given incorrect data, a supplement to this paper will be appreciated.

1. *Abamalekia,* Del. Guer. 1905, Redia, Vol. III, p. 364, t. *lazarew* Del Guercio.
2. *Acanthochermes,* Kollar, 1848, S. B. Akad. Wiss., Wien., I, heft 3, p. 191, t. *quercus* Kollar.
3. *Adactynus* Rafinesque, 1818, Amer. Mon. Mag. and Critic Review, Vol. III, p. 17.

*Canadian Entomologist for 1905 and 1906. Paper in two parts, 1st part 1905, 2nd part 1906.

4. *Adelges,* Vallot, 1836, Compte. Rend. l'Acad., p. 72, t. *laricis* Vol. III.*
5. *Amphorophora,* Buckton, 1876, Mon. Brit. Aphid., Vol. I, p. 187, t. *ampullata* Buckton.
6. *Amycla,* Koch, 1854, Die Pflanz. Aphiden, p. 301, t. *fuscifrons* Koch.
7. *Anisophleba,* Koch, 1854, Die Pflanz. Aphiden, p. 320, t. *hamadryas* Koch.
8. *Anoecia,* Koch, 1854, Die Pflanz. Aphiden, p. 275, t. A. *corni* Fab.
9. *Anuraphis,* Del Guercio, 1907, Redia, Vol. IV, p. 190, t. *A. pyri* Koch.
10. *Aphis,* Linnaeus, 1758, Systema Natura 10th Ed., p. 451, t. *sambuci* Lat. 1802 and *ulmi* Lam. 1801.
11. *Aphioides,* Rondani, 1847, Nouvi Ann. Sci. Nat. Bologna (2) Vol. VIII, p. 439, t. *A. bursaria* Linn.
12. *Aphioides,* Passerini, 1860, Gli Afidi, p. 28, n. n. to replace *Cladobius* Koch, preoccupied.

NOTE.—Usata gia dal Dejean ne 'Coleotteri, onde preporrei di sostiliurgli Aphoides.

13. *Aphrastasia,* Börner, 1909, Zool. Anz. Vol. XXXIV, p. 498 and 502, t. *C. pectinatae* Cholod.
14. *Aploneura,* Passerini, 1863, Arch. Zool. II, *aphididae italica,* p. 78 t. *lentisci* Pass.
15. *Arctaphis,* Walker, 1870, The Zoologist, p. 2000, t. *Ch. populi* Linn.
16. *Aristaphis,* Kirkaldy, 1905, Canad. Ent. Vol. XXXVII, p. 416, n. n. for *Cladobius* Koch.
17. *Asiphum,* Koch, 1854, Die Pflanz. Aphiden, p. 246, t. *ligustrinellum* Koch.
18. *Astegopterx,* Karsch, 1890, Ber, deutsch. Botan. Ges., Vol. VIII, p. 51, t. *styracophila* Kar.
19. *Atheroides,* Haliday, 1839, Ann. Mag. Nat. Hist., Vol. II, p. 189, t. *serrulatus* Hal.
20. *Boisduvalia,* Signoret, 1868, Ann. Ent. Soc. Fr. Ser. 4, Vol. VIII, p. 400, n. n. for *Cerataphis.*
21. *Boizongia,* Rondani, 1848, Nouv. Annali, Sci. Nat. Rend. Ser. II, Vol. IX, p. ?
22. *Brachycolus,* Buckton, 1879, Mon. Brit. Aphid. Vol. II, p. 146, t. *stellariae* Hardy.
23. *Bucktonia,* Lichtenstein, 1886, Mon. Pucer. Die Peupl. p. 16, t. *P. affinis* Kalt.
24. *Byrsocrypta,* Haliday, 1839, Ann. Nat. Hist. Vol. II, p. 190, t. *bursaria* Linn.=*Brysocrypta,* Westwood, 1839, Intr. Mod. Class Ins. Synopsis, p. 118.

*Comptes Rendus, 1836, in two volumes, Nos. II and III.

25. *Calaphis,* Walsh, 1862, Proc. Ent. Soc. Phil., Vol. I, p. 301, t. *betulella* Walsh.
26. *Callaphis,* Walker, 1870, The Zoologist, Vol. V, p. 2000, t. l. *juglandis* Frisch.
27. *Callipterus,* Koch, 1854, Die Pflanz. Aphiden, p. 208, t. *juglandis* Kalt.
28. *Cerataphis,* Lichtenstein, 1882, Bull. Ent. Soc. Fr. Ser. 6, Vol. II, p. XVI, t. *lataniae* Bois.
29. *Ceratopemphigus,* Schouteden, 1905, Spol. Zeylan., II, p. 187, t. *zehntneri* Schout.
30. *Ceratovacuna,* Zehntner, 1897, Mededl, Proefs Java, n. ser. No. 37, p, 29, t. *lanigera,* Zehnt.
31. *Cerosipha,* Del Guercio, 1900, Nouv. Rel. Staz. Fir., Vol. II, p. 116, t. *passerinina* Del G.
32. *Ceylonia,* Buckton, 1891, Ind. Museum Notes, Vol. II, p. 35, t. *theaecola* Buckton.
33. *Chaitophorus,* Koch, 1854, Die Pflanz. Aphiden, p. 1, t. *populi* Linn. (sometimes printed *Chaetophorus*).
34. *Chelymorpha,* Lane Clark, 1858, The Microscope, p. ?, t. *phyllophora.*
35. *Chermaphis,* Maskell, 1884, New Zealand J. Sci., Vol. II, p. 292, t. *pini* Koch = *Kermaphis,* Maskell, Trans. N. Zealand Inst. Vol. XVII, p. 16.
36. *Chermes,* Linn., 1758, Systema Natura, 10th Ed., p. 453, t. *sambuci* Linn.
37. *Chermes,* (*Dreyfusia*)—sub. gen. Börner, 1908, Arbeit, Kaiserl. Biol. Anst. Land und Forst, p. 138, t. *pireae* Ratz. In same year raised to Genus rank under *Dreyfusia.*
38. *Cholodkovskya,* Börner, 1909, Zool. Anz., Vol. XXXIV, p 498, t. *viridanus* Cholod.
39. *Chromaphis,* Walker, 1870, The Zoologist, Vol. V, p. 2001, t. *juglandicola* Kalt.
40. *Cinara,* Curtis, 1835, Curtis Brit. Entom., part 576, no p. no., t. *pini* Curtis.
41. *Cladobius,* Koch, 1854, Die Pflanz. Aphiden, p. 251, t. *populea* Kalt.
42. *Cladoxus,* Rafinesque, 1817, Amer. Mon. Mag. and Critic Review, Vol. I, p. 362.
43. *Clavigerus,* Szlépligete, 1883, Rovaraszati Lapok, I, p. 4, t. *salicis,* Kalt. (unable to find.)
44. *Cnaphalodes,* Macquart, emind Amyot-Serville, 1843, a. p. Histoire naturelles des Insects, Hemipteres Paris, 1843, p. 595, t. *pini,* Linnaeus.
45. *Colopha,* Monell, 1877, Canad. Ent. Vol. IX, p. 102, t. *ulmicola* Fitch.

46. *Cryptosiphum,* Buckton, 1879, Mon. Brit. Aphides, Vol. II, p. 144, t. *artemisiae* Buck.
47. *Dactylosphaera,* Shimer, 1867, Proc. Ac. Nat. Sci. Phil. Vol. XIX, p. 2, t. *globosum* Shim.
48. *Dactylosphaera,* subg. Börner, 1908, Zool. Anz., Vol. XXXIII, p. 609, t. *D. vitifolie* Fitch.
49. *Dactynotus,* Rafinesque, 1818, Amer. Mon. Mag. and Critic Review, Vol. III, p. 17.
50. *Daktulosphaira,* Shimer, 1866, Vol. 18, Prairie Farmer, XXXIV, p. 365, t. *vitifoliae* Shim.
51. *Dreyfusia,* Börner, 1908, Zool. Anz., Vol. XXXIII, p. 173, t. *piceae* Ratz. raised from rank of sub genus. *Dreyfusia* = *Chermes* (*Dreyfusia*).
52. *Drepanosiphum,* Koch, 1854, Die Pflanz. Aphiden, p. 201, t. *platanoides* Schrank.
53. *Dryobius,* Koch, 1854, Die Pflanz. Aphid., p. 225, t. *roboris* Linn.
54. *Dryopeia,* Kirkaldy, 1904, The Entomologist, Vol. 37, p. 279, n. n. for *Endeis* Koch.
55. *Eriosoma,* Samonelle, 1819, Entom. Useful Comp., p. 232, t. *mali* Sam.
56. *Essigella* Del Guercio, 1909, Rivistadi, Patol. Vegetale, Anno. III, p. 329, t. *L. californicus* Essig.
57. *Euceraphis,* Walk. 1870, The Zoologist, p. 2001, t. *betulae* Linn.
58. *Eulachnus,* Del Guercio, 1909, Rivista, di. Patol. Vegetale, Anno. III, p. 329, no type given.
59. *Forda,* Heyden, 1837, Mus. Senkbg. II, p. 291, t. *formicaria* Heyd.
60. *Geoica,* Hart, 1894, 18th Rept. State Ent. Illinois, p. 101, t. *squamosa* Hart.
61. *Gillettea,* Börner, 1909, Zool. Anz., Vol. XXXIV, pp. 498 and 504, t. *C. cooleyi,* Gill.
62. *Glyphina,* Koch, 1854, Die Pflanz. Aphiden, p. 259, t. *V. betulae* Kalt.
63. *Greenidea,* Schouteden, 1905, Spol. Zeylan., Vol. II, 181, t. *S. artocarpi* Westwood.
64. *Hamadryaphis,* Kirkaldy, 1904, The Entomologist, Vol. 37, p. 279, n. n. for *Kessleria* Licht.
65. *Hamamelistes,* Shimer, 1867, Trans. Amer. Ent. Soc., Vol. I, p. 283, t. *spinosus* Shim.
66. *Holzneria,* Lichtenstein, 1875, Bull. Ent. Soc. Fr., ser. 5, Vol. V., p. LXXVI, t. *poschingeri,* Holzner.
67. *Hormaphis,* Osten Sacken, 1861, Stell. Ent. Zeit., Vol. XXII, p. 422, t. *hamamelidis* Fitch.
68. *Hyadaphis* Kirkaldy, 1904, The Entomologist, Vol. XXXVII, p. 279, t. *hyadaphis* n. n. = *xylostei* Scrk. = *siphocoryne,* Pass. 1863 and others (nat. Pass. 1860) see Canad. Ent. Vol.

69. *Hystrichiella* subg., Börner, 1908, Zool. Anz., Vol. XXXIII, p. 609, t. Ph. *spinulosa* Targ.
70. *Hyalopterus,* Koch., 1854, Die Pflanz. Aphiden, p. 16, t. *A. pruni* Fab. *Hyalopteris,* Hunter misprint.
71. *Idiopterus,* Davis, 1909, Ann. Ent. Soc. Amer., Vol. II, p. 198, t. *nephrelepidis* Davis.
72. *Kallistaphis,* Kirkaldy, 1905, Canad. Ent., Vol. XXXVII, p. 417, t. *A. betulicolae* Kalt.*
73. *Kaltenbachiella,* Schouteden, 1906, Mem. Soc. Ent. Belg., Vol. 12, p. 194, t. *menthae* Schout.
74. *Kessleria,* Lichtenstein, 1886, Mon. Pucer, Du Peupl., p. 16, t. *P. spirothecae* Pass.
75. *Lachnus,* Burmeister, 1835, Handbuch, Entom. II, p. 91, t. *punctatus* Burm.
76. *Leptopteryx,* Zetterstedt, 1840, Ins. Lapp., p. 625, t. *nivalis* Zett.
77. *Liosomaphis,* Walker, 1868, Zoologist, p. 1119, t. *berberidis* Kalt.
78. *Lowia,* Lichtenstein, 1886, Mon. Puceng. r on du Peupl., p. 37, t. *passerini* Signoret.
79. *Loxerates,* Rafinesque, 1817, Amer. Mon. Mag., Vol. I, p. 362, *A. Diervilla-lutea* Raf.
80. *Macchiatiella,* Del Guercio, 1909, Rivista di Patol Vegatali, Anno IV, Num. 1, p. 5, t. a. *rhammi* Boyer.
81 *Macrosiphum,* Passerini, 1860, Gli Afidi, p. 27, t. a. *rosae* Linn.
82. *Macrosiphum,* Oestlund, 1886, Minn. Geol. Surv. Rept. 14, p. 27, *rubicola* Oest.
83. *Mastopoda,* Oestlund, 1886, Minn. Geol. Surv. Rept. 14, p. 52, t. *pteridis* Oest.
84. *Megoura,* Buckton, 1876, Mon. Brit. Aphides, Vol. I, p. 188, t. *viciae* Buckton.
85. *Melanoxanthus,* Buckton, 1879, Mon. Brit. Aphides, Vol. II, p. 21, t. a. *salicis* Linn.
86. *Melanoxatherinum,* Schouteden, 1901, Ann. Soc. Ent. Belg., Vol. XLV, p. 113, n. n. for *Melanoxanthus* (used in 1836 in *Elateridae*).
87. *Melaphis,* Walsh, 1886, Proc. Ent. Soc. Phil., Vol. VI, p. 281, t. *rhois* Fitch.
88. *Microparsus,* Patch, 1909, Ent. News, Vol. XX, p. 337,t. *variabilis* Patch.
89. *Microsiphon,* Del Guercio, 1908, Redia, Vol. IV, p. 192, t. a. *tomentillae* Pass.
90. *Microsiphum,* Cholodkovsky, 1902, Jahr. d. St. Petersburger, Forst. Inst. Lief. 8, p. 53, 1902, Redescribed and figured in Zool. Anz., Vol. XXXIII, p. 687. 1908.

*According to Kirkaldy = Callipterus Buckton, 1881, Mon. Brit. Aphid., Vol. III, p. 12, not containing Koch's type.

91. *Mimaphidius,* Rond, 1844, Nouv. Annal. Sci. Nat. Rend. ser. II, p. ?.
92. *Mindarus,* Koch, 1854, Die Pflanz. Aphiden, p. 277, t. *abietinus* Koch.
93. *Monaphis,* Walker, 1870, The Zoologist, p. 2001, t. a. *antennata* Kalt.
94. *Monellia,* Oestlund, 1887, Minn. Geol. Surv. Bull. 4, p. 44, t. *caryella* Fitch.
95. *Mordwilkoja,* Del Guercio, 1909, Rivista, Pathol. Vegt. Anno. IV, no. i, p. 11, t. P. *vagabundus* Walsh.
96. *Moritziella,* Börner, 1908, Zool. Anz., Vol. XXXIII, p. 608, t. *corticallis* Kalt.
97. *Myzocallis,* Passerini, 1860, Gli Afidi, p. 28, t. *coryli* Goetze. =*Mysocallis* Rondani, 1874, Bull. Ital., Vol. VI, p. 62.
98. *Myzoxile,* Arvilly, 1834, Die *Moyzoxile,* p. I, t. *lanigera* Hausm.
99. *Myzoxyle,* Blot. 1824, Mem. Soc. Linn., Calvados I, p. 114, t. *lanigera* Hausm.
100. *Myzus,* Passerini, 1860, Gli Afidi, p. 27, t. *cerasi* Fab.
101. *Nectarophora,* Oestlund, 1887, Minn. Geol. Surv. Bull. 4, p. 78, n. n. for *Siphonophora* Koch.
102. *Nectarosiphon,* Schouteden, 1901, Annalis Ent. Soc. Belg., Vol. XLV, p. 112, n. n. for *Macrosiphum* Oestlund.
103. *Nipponaphis,* Pergande, 1906, Ent. News, Vol. 17, p. 205, t. *distychii* Perg.
104. *Pachypappa,* Koch, 1854, Die Pflanz. Aphiden, p. 269, t. *marsupialis* Koch.
105. *Panaphis,* Kirkaldy, 1904, The Entomologist, Vol. 37, p. 279, n. n. for *Ptychodes* Buckton.
106. *Paracletus,* Heyden, 1837, Mus. Senkb. II, p. 295, t. *cinciformis* Heyd.
107. *Pemphigus,* Hartig, 1841, Zeit. Ent. III, p. 365, t. *bursarius* Linn. =*Pemphilus* Kalt. 1843, p. 180.
108. *Pentaphis,* Horvath, 1896, Wien. Ent. Zeit., Vol. XV, p. 2, t. F. *marginata* Koch.
109. *Pentaphis,* Del Guercio, 1909, Rivistadi Patol Vegetale, Anno III, p. 332, t. *tychea trivialis* Pass.
110. *Pentalonia,* Coquerel, 1859, Ann. Ent. Soc. Fr. Ser. 3, Vol. VII, p. 239, t. *nigronervosa* Coq.
111. *Pergandea,* Subg. Börner, 1908, Zool. Anz. Vol. XXXIII, p. 610, t. *conica* Shimer.
112. *Pergandeida,* Schouteden, 1903, Zool. Anz., Vol. XXVI, p. 685, t. *ononidis* Schout.
113. *Periphyllus,* Von der Hoeven, 1863, Tijdschr, Ent., Vol. VI, p. 7, t. *testudo.*

114. *Peritymbia,* Westwood, 1867, Gardner's Chronicle, p. 681, t. *vitisana* Westw.
115. *Phorodon,* Passerini, 1860, Gli Afidi, p. 27, t. *humuli* Schrank.
116. *Phloemyzus,* Horvath, 1896, Wien. Ent. Zeit., Vol. XV, p. 5, t. *passerinii* Sign.
117. *Phloeophthridium,* Von der Hoeven, 1850, Haub. Dierkunde, I, p. 509.
118. *Phyllaphis,* Koch, 1854, Die Pflanz. Aphiden, p. 248, t. *fagi* Linn. =*Phillaphis* of others.
119. *Phyllophora,* Fernie, 1852, Morris, Nat., Vol. II, p. 265, t. *testudinacea.*
120. *Phyllophorus,* Thornton, 1852, Proc. Ent. Soc. London, n. s. II, p. 78, t. *testudinatus.*
121. *Phylloxera,* Boyer, 1834, Ann. Ent. Soc. Fr., Vol. III, p. 222, t. *quercus.*
122. *Phylloxera,* subg. Börner, 1908, Zool. Anz., Vol. XXXIII, p. 608, t. Ph. *quercus* Fousc.
123. *Phylloxerina,* Börner, 1908, Zool. Anz., Vol. XXXIII, p. 607, t. Ph. *salicis,* Licht.
124. *Phymatosiphum,* Davis, 1909, Annals Ent. Soc. Amer., Vol. II, p. 196, t. *monelii* Davis.
125. *Pineus,* Shimer, 1869, Trans. Amer. Ent. Soc., Vol. II, p. 383, t. *pinicorticis* Fitch.
126. *Polyocellaria,* Imhof, 1900, Biol. Centralblatt, Vol. XX, p. 527, not a valid Genus.
127. *Prociphilus,* Koch, 1854, Die Pflanz. Aphiden, p. 279, t. *bumeliae* Schrank.
128. *Psylloptera* Ferrari, 1872, Anno. del Museo Civ. de Stor. Nat. di Genova, Vol. III, p. 85, t. *quercina* Fer.
129. *Pterocallis,* Passerini, 1860, Gli Afidi, p. 28, t. *alni* Pass.
130. *Pterochlorus,* Rondani, 1848, Nouv. Ann. Sci. Nat., Bologna, (2) Vol. VIII, p. ?, t. *roboris* Rond.
131. *Pterocomma,* Buckton, 1879, Mon. Brit. Aphid., Vol. II, p. 142, t. *pilosa* Buckton.
132. *Ptychodes,* Buckton, 1881, Mon. Brit. Aphides, Vol. III, p. 39, t. *juglandis* Kalt.
133. *Rhizaphis,* Planchon, 1867, Compt. Rend. Paris, Vol. XVII, p. 588, t. *vastatrix.*
134. *Rhizobius,* Burmeister, 1835, Handb. Entom. II, p. 87, t. *pilosellae* Burm.
135. *Rhizocera,* Kirk, 1897, New Zealand, Dept. Agrl. Leaflets for Gardners no. 20, p. 3; also in Vol. 6, 1898, Rept. Dept. Agrl. N. Zeal., p. 178, n. genus for P. *vastatrix* Plan.

136. *Rhizoctonus,* Mokrezhetsky, 1897, Horae Soc. Ent. Vol. XXX, p. 438, t. *ampelinus* Mokr. See also Horvath Wein, Ent. Zeit. XV, p. 5.
137. *Rhizoniaria,* Hartig, 1857, Thander Forstliches Jahrb. Bd. 5, p. 177, not located in above publication.
138. *Rhizopthiridium,* Von der Hoeven, 1850, Handb. Dierkunde I, p. 508, n. n. for *Rhizobius* Burm.
139. *Rhizoterus,* Hartig, 1841, Zeit. Ent. III, p. 363, t. *vacca* Hartig.
140. *Rhopalosiphum,* Koch, 1854, Die Pflanz. Aphiden, p. 23, t. *cicutae* Koch. = *Rhopalosiphon* Scudder 1882.
141. *Rhizoicus,* Passerini, 1860, Gli Afidi, p. 30, t. *souchi* Pass. nn. for *Rhizobius* Burm.
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A Handsome Species of Phalangidae.

By Nathan Banks.

Not many of our harvest-men can be called handsome or beautiful, but many are remarkable and curious. Mr. Crosby has sent me for naming a truly handsome species taken by Prof. Comstock in Texas. The other species of the genus occur in Mexico and California.

Eurybunus formosus n. sp.

Dorsum rich dark brown, a median elongate white spot near tip, truncate at base, pointed at tip, and slightly widened in the middle, the side-margins of dorsum just behind legs is also white. Coxae and basal part of venter pale, rest of venter brown. Mandibles pale or brownish, a dark spot each side at base of claw, and apical half of claw black. Palpi pale brownish. Legs with coxae, trochanters, femora, and patellae yellowish white, except patellae II and apical half of femora II which are brown; all tibiae brown, with white tip, tibia II with apical third white; metatarsi also brown, but paler, and with white tips; broader on leg II; tarsi pale brownish to pale yellowish, darkest on basal part.

Dorsal shield rather elongate, slightly constricted over coxae IV; abdomen tapering behind. All of dorsum minutely spinulose; more prominent spinules near the front margin of cephalothorax, and a cluster each side near middle of front, and a transverse row behind the eye-tubercle. Behind this row are about eight rows of spinules. All joints of legs (except tarsi) with rows of large spinules, a few still larger ones near tips of coxae, femora, and patellae. Palpi also spinulose, except apical joint, eye-tubercle with spinules above. Legs rather heavy; the tibiae heavier than the femora; but femora I and III are much heavier than the others; femur II nearly as long as body; femur I much shorter than the width of cephalothorax. Length, 7 mm.

Several examples from near Austin, Texas, taken by Prof. Comstock, through whose kindness and that of Mr. Crosby, I am describing the species.

Eupithecias that appear to be undescribed.

By Richard F. Pearsall, Brooklyn, N. Y.

Eupithecia dolorosata n. sp.

Expanse 16 mm.—In form and color resembling *coagulata* Guen., but lacking the roseate blush of that species. Palpi moderate, stout, dark brown with extreme tip, white. Vertex white. Front pale gray, with a dusky line between antennae, which are ashen, ringed with black at joints and, bifasciculate, the fascicles of hair slender and short, not bushy as in *miserulata Grote*. *Thorax* darkened by a mixture of black scales. A large white scutellae spot and a white dorsal line along anterior segments of abdomen which is uniformly gray above, a narrow black line on either side nearly to tip, beneath soiled white. Ground color of all wings, ashen, sprinkled with black atoms, densely along costa of primaries, where they form six nearly equidistant black clusters, the beginning of cross lines which are hardly traceable beyond centre. Between spots two and three from base pale twin lines, separated by a fine gray line, cross costa above the small faint discal dot, running directly toward it, then turn sharply outward curving around cell, fading out in crossing, with a basal trend but in a direct line to inner margin half way out. From this line the fifth or extra discal is a little more widely separated at costa, but follows the same course, gradually narrowing the space between them toward inner margin. These two lines are more distinct than any others, markedly so near costa and the ground color between them is paler. Beyond extra discal the usual geminate pale lines parallel it, but are fine and faint. Subterminal space very narrow, the white line barely traceable close to margin and ending in a pale dot below vein two at anal angle. Marginal line black broken at veins. Fringe slightly paler than ground color, silken darker in spots opposite veins. The secondaries show only faint traces of intra and extra discal cross lines, with pale space between as in primaries. The geminate pale line is near to outer margin, runs parallel to it, with a strong curve toward base just before it reaches inner margin. Outer margin flattened between veins three and seven. Marginal black line heavy, unbroken. Fringe as in primaries. Discal dots very small and faint. Beneath, paler than above, the entra and extra discal lines faintly reproduced on primaries. In secondaries they are more distinct, the intra discal making a regular basal curve from inner margin to discal dot, thence at right angles, straight to costa at centre, the extra discal and faint line outside it, indicated by spots on veins. Between these the geminate pale lines show plainly; all parallel to outer margin. Marginal lines distinct black, broken narrowly at veins. Fringes as above. Discal dots small jet black, linear on primaries, round on secondaries. Body and legs soiled white, the fore legs heavily washed with black, all tarsi ringed with yellowish white.

Type: A perfect ♂ captured at light in Big Indian Valley, Catskill Mountains. VIII, 12, '09, by the author and in his collection.

Eupithecia adequata n. sp.

Expanse 20-22 mm.—In wing form and somewhat in style of markings, resembles *multiscripta* Hulst, but about one-half as large. Palpi moderate, rather stout, gray and white scales, tipped with white. Front, vertex and thorax above, white with scattering gray scales. The latter nearly clear white centrally, where are clustered at summit a few pale brown scales, the scutellar region tipped with pure white. Antennae slender, silver gray, with dots of black scales dorsally, shortly biciliate in ♂, very short in ♀. Abdomen above white and pale gray, each segment ringed with clear white posteriorly, the second with a narrow ring of jet black anteriorly. All wings above with ground color pure white, overlaid with black and gray scales, forming the cross lines, and having within basal area and outside extra discal line, a band of bright brown scales, the outermost clearly defined. The basal line with outward curve from costa, turns sharply inward to base. Outside this is the brown band a little broadened toward inner margin, then a well marked black line outside it crosses costa about one-third out, turns sharply toward apex and at cell centre, abruptly backward to inner margin touching it barely one mm. from base. A similar intra discal line crosses costa just above discal dot, makes a sharper, longer spur toward apex, and turning, passes backward close beneath discal dot, parallel to previous lines and close to it, broadening and darkening as it reaches inner margin. Beyond this line, a broad, clear space crosses both wings, traversed by four fine parallel gray lines, outwardly defined by heavier black lines parallel to preceding lines, but much waved. The pale central space like a broad band is a conspicuous mark of this species, and has a spur projecting from its costal angle, toward outer margin just below apex. The costal and space above this is darker and dashed with black lateral streaks. The geminate pale lines seem fused into a single broad, wavy white line, and beyond this the brown line clear across wing, waved to just within anal angle. A narrow white line succeeds this and the very narrow submarginal space is gray. Marginal line fine jet black hardly broken at veins. Fringes long, gray, darker at base, traversed centrally by a white line. Discal dots small, linear, jet black. Secondaries, like primaries, have a dark basal area, succeeded by broad pale band, bordered with black at inner margin, and traversed by two fine gray lines, all of which fade out before reaching wing centre. A broad shade line of gray, outside pale band, runs parallel with outer margin, fading out costally and outwardly bordered by the single broad white

line. Submarginal space narrow gray. No brown line, but centrally traversed by a broad, wavy, white line as on primaries. Marginal line and fringe as on primaries. Discal dots barely visible. Beneath the primaries are dusky, the intra and extra discal and a central submarginal line as above, dark and well defined. The central broad, pale band and the geminate pale lines, outside extra discal, are clear white. Secondaries more dusky, the lines as above darker, but crossing wing entire, the extra discal with a strong outward curve about cell, the central space and geminate lines clear white. Body, legs and abdomen beneath white thickly sprinkled with dark brown and gray scales. Discal dots larger and distinct on all wings.

Types ♂ and ♀ taken at Eureka, Utah (Spalding) V. 9, '09 and V. 10, '09. Cotypes from same locality 10 ♂ and 3 ♀ V. 6 to 30, '09, all in author's collection. I have compared this species with *multiscripta* in wing shape and style of markings, but the pale central band with its spur to apex would mark it as an intermediate form between that species and *acutipennis* Hulst and allies.

It is easily identified by this peculiarity and by the bright brown bands on primaries.

Eupithecia incresata n. sp.

Expanse 18-20 mm.—Primaries somewhat produced at apex outer margin strongly sloping inward, the anal angle falling much within the outer curve of secondaries which are rather long but well rounded. Palpi moderate, bushy dark brown. Vertex, front and thorax dark brown and gray scales mixed. Antennae brown, stouter and faintly black ringed in. ♂, flattened and shortly ciliate; slender and without rings in ♀. Abdomen clothed above and beneath with yellow and dark brown scales mingled with whitish. Basal segments above, nearly clear white. No black ring on second, though in the ♂ the dorsal tuft is enlarged giving that appearance—otherwise they are small, black. Body and legs grayish white, thickly sprinkled with dark brown. All wings above gray, thickly sprinkled with dark brown and blackish scales. In ♂ there is strongly apparent, a washing of yellow brown, costally and subterminally on all wings, in ♀ not so distinct. In both the covering is soft, without definite lines. Basally there is a darkened area, outlined by a faint intra discal line which, crossing costa above discal point suddenly curves outward around and beneath it, thence in waves to inner margin over one-half out. Extra discal indicated by a few black dashes centrally on veins, and by a dark spot on costa. Basally on costa, along median vein, and on vein one,

are also scattered dashes of black. Geminate pale line cross costa wide apart. The inner suddenly cuts off the outer at this point, makes a long angle toward apex and crosses. Wing in a single broad, firmly marked white line parallel to outer margin. Subterminal space slightly darkened, traversed centrally by a much broken pale line ending in a white spot between veins 1 and 2, which is accentuated by a cluster of dark scales on inner or basal side. This spot is also present at anal angle on secondaries which are crossed by a single whitish wavy line parallel to outer margin, and forming the inner boundary of the subterminal space, which, as on primaries, is slightly darkened, and centrally traversed by a very indefinite pale line. A few black scales at inner margin toward base. Marginal lines on all wing black widely broken at veins, followed by a fine clear white line at base of fringes, which are long, silken, brownish gray, heavily clouded with black spots opposite veins. Discal dots very small; on primaries slightly linear black, on secondaries barely visible. Beneath the primaries are dusky, toward apex washed as above with yellow brown. The geminate pale lines broad at costa, and outlined across it by black scales. The inner is lost before reaching wing centre, the outer entire and well defined, not wavy, and its angle below costa more obtuse than on upper surface. Secondaries whitish ash, crossed by three lines of dusky spots, outside the discal spot, the two inner parallel with a sharp outward angle opposite cell, are succeeded by the broad pale line as above, and this by a dusky line of spots parallel to outer margin. Discal dots black more apparent than above. Fringes paler with dusky spots large and very distinct.

Type ♂ taken at Princeton Summit, B. C., VII. 9, '09, the ♀ in Skagit Basin, B. C., VII, 19, '09, in author's collection.

In the male of this, and some other species, I have noted that the hind tibiae are short and stout and the upper spurs placed in a depression, which causes it to look twisted. If proven constant this feature may form a basis for grouping by the scientist who will monograph this genus and its allies twenty years hence.

(To be continued)

Schizomyia ipomoeae n. sp.

By E. P. Felt, Albany, N. Y.

The interesting species described below was reared in large numbers by William W. Pattersons, of St. Vincent, B. W. I., from flower buds of Ipomoea. It is most easily distinguished

from American forms by its small size, the reddish brown abdomen and in particular by the varicolored antennae, the segments basally being a more or less distinct yellowish.

Male.—Length, 1.2 mm. Antennae as long as the abdomen, rather thickly haired, dark brown, the segments basally dull yellowish, the fifth segment with a length about six times its diameter, thickly clothed with short, even setae and with heavy, irregular circumfili; terminal segment tapering, with a length seven times its diameter. Palpi; first segment short, stout, irregular, the second a little longer, swollen near the middle, the third half longer than the second, slender, the fourth half longer than the third. Eyes large, black. Mesonotum reddish brown. Scutellum and post-scutellum dark brown. Abdomen a variable reddish brown. Wings hyaline, costa light brown, the third vein uniting with the margin just beyond the apex. Halteres whitish transparent. Coxae, femora and tibiae a variable yellowish or fuscous yellowish, the tarsi slightly darker. Claws long, slender, simple, the pulvilli shorter than the claws. Genitalia; basal clasp segment stout, distally thickly setose; terminal clasp segment subapical, short, stout, irregularly bifid; dorsal plate short, narrowly incised, the lobes obliquely truncate, setose at the angles; ventral plate long, narrow, deeply and narrowly emarginate, the lobes long, slender, tapering; style short, acute.

Female.—Length, 1.75 mm. Antennae nearly as long as the body, thickly clothed with short hairs, dark brown, the basal fourth of segments three to six yellowish, the fifth with a length six times its diameter, thickly clothed with short hairs and with low circumfili near the basal third and apically; 12th segment with a length three times its diameter; 13th with a length half greater than its diameter, the 14th with a length only a little greater than its diameter. Palpi; first segmen short, with a length three times its diameter, the second twice the length of the first, stout, the third and fourth slender, each successively slightly longer. Mesonotum, scutellum, postscutellum and abdomen a little lighter than in the male. Ovipositor when extended as long as the body, the basal portion pale orange yellow, the distal part tapering to an acute apex. Basal plate weakly chitinized. Other characters nearly as in the male.

Exuviae.—Length, 2.5 mm., whitish, stout. Antennal sheaths stout, indistinctly annulate and extending to the second abdominal segment Cephalic horns moderately stout, slightly curved. Wing pads extending to the third abdominal segment, the leg cases to the sixth. The dorsum of abdominal segments 2 to 8 inclusive, with an irregular, narrow, transverse band of heavily chitinized spines.

Type Cecid a2022, N. Y. State Museum.

Two New Aphelinine Parasites of Scale Insects.

By L. O. Howard.

In the course of his almost constant journeying in different parts of the world searching for beneficial insects, Mr. Geo. Compere, Agent of the State Board of Horticulture of California and of the Department of Agriculture of Western Australia, finds many curious and interesting parasitic Hymenoptera. Many of these he sends to the writer for determination, and in a lot received quite recently there occur two new Aphelinines which it seems desirable to name at once. The descriptions follow:

Genus **PHYSCUS** Howard.

Physcus Howard. Bulletin No. 1, Technical Series, Bureau of Entomology, U. S. Department of Agriculture, 1895, page 43. Type *Coccophagus variconis* Howard (Annual Report, Department of Agriculture, 1880, page 360.

Physcus flaviventris n. sp.

Female.—Length 0.97 mm.; expanse 2 mm.; greatest width of fore-wing 0.3 mm.—Somewhat slenderer than *varicornis*. Head and thorax dark brown nearly black. Abdomen above and below orange-yellow, brown at sides. Scape brown; pedicel and all three funicle joints pallid; club brown, pale at tip. Fore femora and base of fore tibiae brown; remainder of front legs and all of middle and hind legs pallid, tinged with yellowish. Wing veins not colored, transparent.

Type No. 12,167, U. S. N. M.

Described from two female specimens reared by George Compere from *Chrysomphalus aurantii* Mask, Manila, P. I.

Genus **PERISSOPTERUS** Howard.

Perissopterus Howard. Technical Series No. 1, Bureau of Entomology, U. S. Dept. Agric., 1895, page 20. Type *Aphelinus pulchellus* Howard, Annual Report, U. S. Dept. Agric., 1880 page 356.

Perissopterus carnesi n. sp.

Female.—Length 0.81 mm.; expanse 1.83 mm.; greatest width of fore-wing 0.198.—Resembles *Perissopterus javensis* Howard (Technical Series No. 12, Part IV, 1907, page 88), but differs in having the tip of the first tarsal joint of the middle legs yellow and the fourth

tarsal joint brown. This tarsus being thus colored, 4th and 5th joints and all of 1st joint except tip brown; 2nd and 3rd and tip of 1st yellow.

Type No. 12,168, U. S. N. M.

Described from three female specimens reared by George Compere from *Lepidosaphes beckii,* China. The specific name is given in honor of Mr. Edward K. Carnes who has charge of the admirable insectary of the California State Board of Horticulture at Sacramento, Cal.

The Genus Trybliophorus Serville, and its Species.

By Lawrence Bruner.

Trybliophorus Serville, Rev. Meth. Orthopt., p. 83 (1831); Ib., Hist. Nat, Orthopt., p. 631 (1839); Stål, Syst. Acrid., p. 43 (1878); Brunner, Rev. Syst. Orthopt., p. 136 (1893); Giglio-Tos, Boll. Mus. Zool. Anat. Comp. Univ. Torino, XIII, No. 311, p. 43 (1898).

Stegastris Gerstaecker, Bemerkens, Orthopt., p. 63 (1888); Brunner, Rev. Syst. Orthopt., p. 136, foot note (1893).

This genus is characterized chiefly by having the disk of the hind lobe of the pronotum flattened and extended in the form of a triangle backwards so as to reach the front edge of the first abdominal segment. The apical joint of the maxillary palpi is ampliate and much flattened, while the antennae are very heavy and elongate.

Recently while studying a small collection of locusts from Peru, South America, that had been submitted to the writer for determination, a single female specimen of the genus *Trybliophorus* was encountered among other interesting forms. An examination of this insect showed it to be an undescribed species. It was accordingly named *T. peruviana,* and a description of it drawn up and sent, along with others, to Prof. Nicholas Iconnicoff, of the University of Moscow, for publication. In the meantime Mr. James A. G. Rehn, of Philadelphia, has submitted to me for examination and description, if I so desired, another specimen of the same genus. The latter insect, also a female, comes from Surinam or Dutch Guinea.

An examination of the several descriptions heretofore pub-

lished, together with the two specimens here referred to, has enabled me to draw up the annexed synoptical table for the separation of the known species:

Synopsis of the species of *Trybliophorus*.

A Sides of the face, pronotum and pleura varied by pallid or yellow lines or maculations.

b Size smaller (♀ 25–28 mm.). The face, cheeks and sides of pronotum and pleura in advance of the insertion of the hind femora adorned by a row of four whitish maculations [Cayenne, French Guiana) . . . . . 1. **octomaculatus** Serv.

bb Size larger (♀ 32–39 mm. or more). The face, cheeks, sides of pronotum and pleura adorned with yellow bands or maculations.

c Size medium (♀ 32–34 mm).

d Hind femora pale coral red, the tibiae dark blood-red with brownish apices and black spines (Fontehoa, Amazonas]. 2. **corallipes** Gerst.

dd Hind femora testaceous, the tibiae barely tinged with red, the spines black tipped [Surinam or Dutch Guiana]. 3. **elegans** Rehn.

cc Size large (♀ 39 mm. or more).

d Antennae reddish brown. Wings only faintly infuscated [North Central Peru] . . . . . 4. **peruviana** Bruner.

dd Antennae purplish red. Wings blackish [Brazil]. 5. **bivittatus** Walk.

AA Sides of the face, pronotum and pleura unadorned by pallid or yellow lines or maculations [Ega, Amazonas] . 6. **volucris** Gerst.

The species *octomaculatus* Serville is, of course, the type of the genus, while *corallipes* Gerstaecker and *elegans* Rehn are both quite nearly related to it. In fact, it is rather difficult to decide just which one of these two should immediately follow the type when the species are arranged in sequence. The species *peruviana* Bruner and *bivittatus* Walker are both larger than the other four, but are also quite similar in general color and markings to the type and Gerstaecker's and Rehn's species just referred to. The species *volucris* Gerstaecker is unique in lacking the pallid maculations on the face, sides of the head, pronotum and pleura. Whether it should precede *octomaculata* in the arrangement of the species or remain at the end of the list has not been definitely decided.

The Macrolepidoptera of the Bermudas.

By Frank Morton Jones, Wilmington, Delaware.

The nearest point of land to the Bermudas is Cape Hatteras, North Carolina, 575 nautical miles distant. Considering the variety of the vegetation, the apparent lack of climatic bars to the establishment of a wide variety of insect life, and the fact that comparatively fragile forms have been known to cross over from the mainland, the fauna is a meager one and the entire absence of many widely distributed groups is remarkable. In 1902 Prof. A. E. Verrill published (Trans. Conn. Acad. Sci., XI) a list of the insects of Bermuda, based on his own collections and on all previously published records. He lists forty species of Macrolepidoptera; of these, however, one species is duplicated as a synonym; three were not positively identified; three others have not been recorded for more than fifty years, the specimens were not seen by Prof. Verrill, and the correctness of their identification requires confirmation; of the remaining thirty-three species several occur as stragglers only and are not established on the islands.

In a stay upon the Islands extending from December 7, 1908, to May 20, 1909, I was able to confirm the presence of many of the previously recorded species and to add materially to the list. Several hundred specimens were collected for me in the summer of 1909, but with the exception of a single species this material duplicated my captures of the winter and spring. I am indebted to Dr. H. G. Dyar, Dr. J. B. Smith and Mr. J. A. Grossbeck for identification of specimens; to Prof. Stewardson Brown for identification of food-plants; to Miss Estelle Jones, Messrs. Louis Mowbray, Clifton Astwood and Francis Hutchings for specimens and notes.

It is of course possible that careful summer collecting will add considerably to the following list:

Agraulis vanillae Linn.—Not heretofore recorded; believed locally to be of recent introduction; now the most abundant butterfly, in all stages throughout the winter; foodplant *Passiflora umbrosa* L.

Danais berenice Cram.—Recorded on previous lists; not seen, 1908-9.

Danais plexippus Linn.—Well established, breeding throughout the year; larvae on (introduced) *Asclepias.*

Vanessa antiopa Linn.—Not seen, 1908-9.

Pyrameis atalanta Linn.—Not abundant; fresh specimens, April and May.

Pyrameis cardui Linn.—Not abundant; fresh specimens, December and March.

Junonia coenia Hbn.—Abundant, all stages throughout the winter; foodplant *plantain.*

Pieris rapae Linn.—Listed by Prof. Verrill as seen but not captured; if established on the Islands, still rare.

Catopsilia eubule Linn.—Probably not permanently established.

Terias lisa Bdv.—Often an abundant summer species; two cases are recorded of vast flocks of this butterfly arriving and spreading over the Islands (Oct. 10, 1847 and Oct. 1, 1874); reported to me as abundant for a few days only, 1909.

Colias philodice Godt.—Not seen, 1908-1909.

Papilio cresphontes Cram.—Prof. Verrill records a single specimen.

Theretra tersa Linn.—In all stages throughout the winter.

Dilophonota ello Linn.—Not rare; larvae on "Joseph's Coat," Poinsettia heterophylla.

Phlegethontius cingulata Fabr.—Present in all stages.

Chlaenogramma jasminearum Bdv.—Recorded in 1876; probably a straggler.

Lycomorpha pholus Dru.—Also not recorded since 1876.

Utetheisa bella Linn.—Recorded as an abundant summer species; not seen, winter and spring, 1908-9.

Isia isabella S. & A.—Probably a recent introduction; Mr. Mowbray has found several larvae.

Perigea sutor Gn.—Occasional at light.

Perigea circuita Gn.—At light, sugar and bread.

Perigea subaurea Gn.—Recorded by Butler, Challenger Exp., 1884.

Prodenia commelinae S. & A.

Prodenia eridania Cram.—Abundant, all stages; favorite food of larva, castor-oil plant.

Prodenia ornithogalli Gn.—Abundant, all stages.

Laphygma exigua Hbn.—Recorded by Butler.

Agrotis ypsilon Rott.—Not abundant, 1908-9.

Peridroma saucia Hbn.—Bred; well established.

Peridroma incivis Gn.—Bred and at sugar.

Feltia annexa Gn.—Not rare; bred.

Feltia malefida Gn.—Not rare.

Leucania unipuncta Haw.—Well established.

Leucania latiuscula H. S. (*subpunctata* Harv.)—Well established; bred.

Heliothis obsoleta Fab.—(Not found, 1908-9).

Autographa ou Gn.—Abundant; bred; larvae on *Parthenium hysterophorus* L.

Autographa rogationis Gn.—Abundant.

Autographa brassicae Riley.—Not frequent.

Anomis erosa Hbn.

Callopistria floridensis Gn.

Gonitis editrix Gn.—The showy larvae abundant on *Triumfetta semitriloba* Jacq.

Remigia repanda Fabr.—Bred and at sugar; abundant and variable.

Thermesia monstratura Wlk.—Recorded by Butler.

Tetanolita mynesalis Wlk.—Occasional at light.

Bomolocha citata Grt.—Larger and more strongly marked than usual; possibly distinct; larvae abundant on *Sida rhombifolia.*

Percnoptilota fluviata Hbn.—Not rare.

Gypsochroa sitellata Gn.—Not rare.

Cosymbia myrtaria Gn.—Bred; large and dark, like Florida specimens.

Scelolophia purpurissata Grt. (*formosa* Hulst).

Eois laevitaria Hbn. (*floridata* Pack).—This beautiful little Geometer locally abundant, Warwick Marsh, May.

Eois crossii Hulst.—Not rare; bred from larvae on *Lantana odorata.*

Synchlora denticulata Wlk.—Bred; larvae abundant, flowers of *Solidago* and *Vervian.*

Alcis verrillata Dyar.—Abundant;; bred; also at light and sugar. This variable insect is supposed to be exclusively Bermudian. Its larvae are abundant in the winter and spring, doubtless throughout the year, on the Bermuda cedar, *Juniperus bermudiana,* but their protective coloration is so perfect that search for them except by beating is almost hopeless. They are of almost uniform diameter without prominent protuberances; smooth, green in color of the same shades as the younger leaves of the cedar; a light line on the head, following the groove of the clypeus; a light subdorsal line, curved outwardly on the segments; an interrupted pale stigmatal line. Pupation in a thick earthen cocoon; the pupa green, translucent, the abdominal segments brown; in January and February the pupal period lasted eighteen to twenty-two days.

In addition to the foregoing species Professor Verrill included in his list (on the authority of J. Matthew Jones, 1876)

Vanessa io, Vanessa polychloros and *Debis portlandia,* single specimens of each, "taken by Canon Tristram in 1848." The local collectors, as far as I could learn, know nothing of these. Professor Verrill also records an unidentified black *Papilio,* seen but not captured, in 1901.

Of the total area of the Islands (about nineteen square miles) a comparatively small portion remains in anything approaching undisturbed condition. The sand hills and rocky cliffs of the south shore and the marshes are least disturbed by cultivation. The extensive Devonshire marshes have been badly burned over within a few years; those in Warwick Parish are now almost treeless; a deep valley near Paget Parish Church is grown up with palmetto, various shrubs, tall ferns and marsh-grasses, and this is probably the best collecting-ground readily accessible from Hamilton; the Walsingham tract yields a number of plants and a few insects not seen elsewhere; but throughout the Islands, insects, while at times abundant enough in individuals, are of such a limited number of species that collecting is a constant disappointment to the entomologist who expects his captures to accord with the semi-tropical climate and vegetation. Of the fifty-two species on the present list, all but six have been recorded from our own Southern States.

Three New Psenid Wasps from New Jersey.

By S. A. Rohwer, Washington, D. C.

Descriptions of three new wasps belonging to the family Pseniidae are submitted here so they may be included in the forthcoming list of insects found in the State of New Jersey.

Psen (Mimesa) nigrescens n. sp.

Belongs to group *nigra* of Fox, and is related to *mixta* Fox and *lencopa* Jay. The sparsely punctured vertex and orbits, the almost impunctate mesopleuræ with the upper part striated, the transversely striated diamond-shaped area of the enclosure, the elongate abdomen, and simple flagel will help distinguish it from its allies.

♂. Length 7.5 mm. Anterior margin of the clypeus bidentate; front

with close, distinct punctures, vertex and posterior orbits sparsely punctured; frontal carina not reaching the antennæ; ocelli in a triangle, the distance between the lateral ones nearly as great as the distance from one of them to the nearest eye margin; flagel simple, thickening apically, the first joint scarcely longer than the second, the antennæ hardly as long as the head and thorax; dorsulum and scutel with small, widely scattered punctures; the upper part of the mesopleuræ striato-punctate, the rest of it sculptured as the dorsulum; enclosure with slightly oblique striæ, the diamond-shaped area with transverse striæ; the rest of the metathorax with large reticulations; legs rather slender; venation normal for *Mimesa* except the first recurrent is interstitial with the first transverse cubitus; petiole trisulcate, a little shorter than the hind femora; abdomen elongate, narrow, the sutures distinct. Black; flagel beneath and tegulæ dark testaceous; anterior tibiæ and tarsi, the four posterior tarsi, and knees very pale brown. Wings hyaline, strongly iridescent; venation dark brown. The pubescence silvery and not very dense.

One paratype is a little smaller, and in two of them the cubital venation is normal.

Type locality: Clementon, N. J., June 30, 1908. Other localities: Germantown, Pa., July 18, 1908 (Harbeck).

Type No. 12,858 U. S. N. M.

Psen (Mimesa) perplexa n. sp.

Belongs to group *argentifrons* of Fox and is related to *maculipes* Fox.

♀. Length 8 mm. Anterior margin of the clypeus emarginate, its surface with close, but not touching, punctures; front with close, fine punctures, vertex and cheeks with widely separated punctures; anterinal foveæ extending above the antennæ and forming a pit at their extremity; ocelli in a triangle, the distance between the lateral ones about the same as the distance from one of them to the nearest eye margin; third antennal joint but little longer than the fourth; dorsulum and scutel shining with small widely separated punctures; the suture between the scutel and dorsulum foveolate; middle of the mesopleuræ smooth, shining, laterally and dorsally strongly, longitudinally striated; metanotum with strong, slightly obliquely striated, at the apex with a diamond-shaped area which has a remnant of a transverse stria; posterior face with sharply defined reticulations; the metanotum with transverse striæ posteriorly; pygidium well defined, closely granular; petiole robust, short about the length of the rest of the segment, bisulcate. Color black; flagel beneath, tegulæ and tarsi testaceous;

tibiæ dark brown; facial pubescence slightly yellowish; thoraxic pubescence silvery; wings slightly dusky iridescent; venation dark brown.

Type locality: Camden County, N. J., August 6, 1890. Collection of W. J. Fox.

Type No. 12,859 U. S. N. M.

On account of the short petiole this species falls in with *basirufa* Cress. and *proxima* Cress., but will be separated at once by the absence of a rufous band on the abdomen. The female of *maculipes* Fox is undescribed, and *perplexa* is very like what we may expect this female to be, yet there are so many differences that *perplexa* seems distinct from the Florida species.

Pemphredon (Cereonus) harbecki n. sp.

Allied to *bipartator* Fox, but may be distinguished by the sparser punctures of the head and dorsulum, the small enclosure of the metanotum, the presence of a furrow on the petiole above, and in having the petiole longer, the emargination of the clypeus is narrower and more sharply defined than in *bipartator* which has the emargination sloping at the base, instead of the basal wall being perpendicular.

♀. Length 7.5 mm. Clypeus with a deep semi-circular emargination; mandibles not punctured basally; clypeus, supraclypeal area, vertex and posterior orbits shining with distinct, well separated punctures; front striato-punctuate; distance between the lateral ocelli distinctly less than the distance from one of them to the nearest orbital point; third antennal joint distinctly longer than the fourth; dorsulum and scutel with widely separated, distinct punctures; mesopleuræ irregularly, transversely striato-punctate; enclosure of the metathorax rather small, with some strong longitudinal striæ laterally, centrally reticulate; the shining area bounding the enclosure large; sides and posterior face of the metathorax punctato-reticulate; petiole two-thirds the length of the hind femora, with separate punctures and a deep middle furrow above; legs and abdomen normal; second recurrent nervure interstitial with the first transverse cubitus. Entirely black; hair gray; wings hyaline, iridescent; venation black.

Type locality: Trenton, N. J., July 5 (H. S. Harbeck).

Type No. 12,867 U. S. N. M.

New Species of Tineina from California.

By Annette F. Braun.

Argyresthia trifasciae n. sp.

Labial palpi, face, head and thorax pale golden. Antennae whitish, with broad brown annulations. Forewings shining white with a faint yellowish tinge, and marked with pale golden as follows: An oblique basal patch, followed by two slightly oblique fasciae nearer the base on the dorsal margin, the second of which lies at the beginning of the dorsal cilia; a third perpendicular fascia, followed by a more indistinct curved golden streak in the apical portion of the wing; extreme apex and cilia golden. There are a few scattered golden scales on the costa between the fasciae. Hind wings pale yellow. Abdomen and legs golden, except the fore tarsi which are brown. Expanse, 7-7.5 mm.

The specimens from which the above description was prepared were collected at Ocean Beach, San Francisco County, May 31, 1908, by Mr. G. R. Pilate.

This species should be placed between *A. quadristrigella* Zeller and *A. thoracella* Busck, being probably more closely related to the latter. Veins 7 and 8 of the forewings are stalked.

Types in my collection.

Argyresthia pilatella n. sp.

Face and head gray, front part of the tuft whitish; basal joint of antennae almost pure white, remainder annulate with black. Thorax dark gray. Forewings with the whitish somewhat shining ground color almost overlaid with brownish gray scales, arranged for the most part along the costal and dorsal margins into narrow strigulae, between which the white ground color is evident. At the middle of the dorsal margin, these scales are collected into a broad and much darker patch, which extends obliquely backward as a curved streak nearly to the costal margin where it meets the apex of a similar but much smaller and less distinct costal streak, thus forming an outwardly angulated more or less distinct fascia. Sometimes the dark scales are almost evenly distributed over the entire surface of the wing except along the costa near the apex, where the strigulae are distinct. Along the apical half of the costa, the white interspaces between the strigulae are broader; sometimes the only dark streak is a conspicuous one just before the apex. A black apical dot, sometimes obsolete. Cilia opposite the strigulae and around the apex gray becoming paler toward the tornus. Hind wings silvery gray, their cilia tinged with

brown. Abdomen and legs gray, tips of the tarsi darker. Expanse, 9.5-10.5 mm.

Nine specimens: Mills College, Cal., May 20, 1908; San Francisco, April 12, 1909; all collected by Mr. G. R. Pilate. A dark indistinctly marked species, apparently not closely related to any of the described American species. Veins 7 and 8 of the forewings are stalked.

Type in my collection; paratypes in the California Academy of Sciences and in Mr. W. D. Kearfott's collection.

Nepticula ceanothi n. sp.

Palpi deep bronze; tuft reddish orange; antennae almost black; eyecaps shining yellow. Thorax and basal third of the forewings with deep purple and blue metallic reflections, becoming brilliant reddish bronze outwardly. A shining golden fascia at one-third, and a second similar one at two-thirds. Beyond the first fascia, the ground color of the wings is dull dark brown. Cilia brown, becoming iridescent gray toward their tips. Hind wings and cilia dark brownish gray. Upper surface of abdomen dark brown; lower surface of body and legs metallic gray with faint bronze reflections. Expanse, 4.5-5 mm.

Three specimens bred from upper side mines on leaves of *Ceanothus divaricatus* Nutt., collected by Mr. G. R. Pilate, at Dutch Flat, Placer Co., California. The mine is a brownish much contorted linear tract with a broad area of frass sometimes nearly as wide as the mine. The mine averages 32 mm. in length with 1 mm. for the greatest breadth. The cocoon is flattened elliptical, somewhat broader toward its anterior end, and densely woven of reddish brown silk. The mines were received in February; the imagoes emerged from the middle of March to the middle of April.

Types in my collection.

Nepticula diffasciae n. sp.

Palpi shining gray, tuft reddish yellow; antennae dark gray, eyecaps shining yellowish white. Thorax and forewings lusterless black, the latter inconspicuously mottled in the apical third. There are two pale fasciae; the first at one-third is pale dull yellowish white; the second at two-thirds is almost pure white, somewhat shining, and usually considerably narrower than the first. Cilia around the apex whitish, becoming gray toward the tornus. Hindwings very pale grayish brown, with gray cilia. Abdomen toward the base concolorous with

the hindwings, shining gray behind. Underside and legs shining gray, faintly tinged with brown. Expanse, 5.5-5.8 mm.

Described from six bred specimens, Dutch Flat, Placer Co., Cal. I have, however, been unable thus far to identify the food plant, which is a shrub with lanceolate yellowish green leaves, densely tomentous beneath. The mine, which is semi-transparent, is a tortuous tract on the upper side of the leaf, with the frass deposited in separate grains throughout its entire breadth. The end of the mine, which is free from frass, is whitish and almost transparent. Cocoon ovoid, not at all flattened, and pale yellowish in color. Mines collected in the early part of March produced imagoes during May.

Types in my collection.

Nepticula variella n. sp.

Palpi yellow gray; tuft yellowish orange; antennae dark gray, eyecaps pale yellow. Thorax dark fuscous. Ground color of the forewings sordid yellowish white, which is in most specimens almost entirely overlaid with fuscous scales, leaving only the apex of the wing and a more or less distinct fascia at the apical third of the pale yellow color. This is the case in about four-fifths of the specimens; in the others, the dusting of the basal two-thirds of the wing varies, in some cases being merely less dense, in others lacking toward the costal or dorsal margins, and in a single specimen entirely lacking, except for a few scattered scales. Cilia fuscous sometimes yellow around the apex. Hindwings gray, with their basal half in the male overlaid with purplish black scales. Dorsal side of the abdomen blackish, lower side and legs yellowish gray. Expanse, 5.5-7.5 mm.

Twenty-one specimens bred from winding mines on the upper side of *Quercus agrifolia* Nee., Mills College, Alameda County, Cal., and one specimen on a deciduous oak from the same locality. The mines on the latter are somewhat longer than on the thicker leaved evergreen oak. The yellowish cocoon is ovoid, not flattened, and slightly broader toward its anterior end. Mines received in January produced imagoes in the latter part of February and in March.

This species exhibits a considerably wider range of variation than is usual in the genus.

Type in my collection; paratypes in the California Academy of Sciences and in Mr. W. D. Kearfott's collection.

Nepticula punctulata n. sp.

Palpi grayish; tuft grayish yellow, antennae gray, eye-caps yellowish white. Thorax gray. Forewings shining grayish, yellowish white, with numerous fuscous scales evenly distributed over their surface, so as to give the wings a finely peppered appearance. Cilia pale gray. Hindwings and cilia pale gray, the latter tinged with yellow. Body and legs pale shining gray, faintly tinged with red. Expanse, 4.5-5.5 mm.

Two specimens bred from upper side mines on leaves of *Ceanothus cuneatus* Nutt., from Dutch Flat, Placer County, Cal. The mine, which in its early stages is not very distinctly visible on the surface of the small thick leaves, usually follows the margin of a leaf, often being bent back on itself. Toward the end it bends into the middle of the leaf, where its apex is suddenly slightly enlarged.

The cocoon is elliptical, much flattened on its lower side, reddish brown in color, with its upper convex side covered with a loose meshwork of paler strands.

The mines were received in the early part of January, the imagoes appeared February 27th. The remarkably even distribution of the dark dusting is a striking characteristic of this species.

Types in my collection.

Bucculatrix ochristrigella n. sp.

Face and head creamy white, with a few grayish brown scales in the tuft; antennae pale grayish. Thorax and forewings creamy white, the latter marked with ocherous patches and dashes as follows: a narrow streak along the basal third of the costa, which is brown at its extreme edge; a basal streak in the fold extending nearly to one-third; just within the costa, an elongate patch at one-third; opposite its end a short streak extends obliquely backward from the middle of the dorsal margin; just behind the middle of the wing, a long oblique transverse streak, broadest on the costa, extends across the wing into the cilia of the termen, where it is flecked with brown scales; a triangular spot on the costa beyond this; an oblique streak from the apex into the apical cilia, this latter and also the triangular spot being sparsely flecked with brown scales, which are continued backward to join the dusting at the end of the transverse streak. Hind wings and cilia very pale ocherous. Abdomen above dark posteriorly, lower side and legs grayish ocherous. Expanse, 11-11.5 mm.

Described from a large number of specimens collected at Mills College, Alameda County, Cal., May 11-20, 1908, by Mr. G. R. Pilate.

The ocherous markings are not always as clearly defined as indicated by the description given above; this is especially true in regard to the streak in the fold.

Type in my collection; paratypes in the California Academy of Sciences and in Mr. W. D. Kearfott's collection.

Bucculatrix albaciliella n. sp.

Face and tuft white, the latter with a few ocherous scales interspersed, antennae gray. Thorax and forewings pure snowy white. Forewings marked with ocherous patches. These markings consist of a streak in the fold near the base; a spot just within the costa before the middle and a spot similarly placed at two-thirds; opposite the space between these two, a short streak in the fold. The yellow patch at two-thirds is more or less connected with an oblique transverse spot running to the termen. There are a few ocherous scales on the costa before the apex. All of these marks are often very faint. Cilia pure white. Hind wings slightly tinged with gray, their cilia white. Body grayish ocherous. Legs whitish except the anterior pair which are gray. Expanse, 7.5-8.5 mm.

Eleven specimens: Mills College, Alameda County, Cal., May 11-20, 1908. In general type of marking, it closely resembles *B. ochristrigella* Braun, but may easily be distinguished from it by the smaller size, pure white color, and the absence of the apical streak into the cilia.

Type in my collection; paratypes in the California Academy of Sciences and in Mr. W. D. Kearfott's collection.

Bucculatrix tetrella n. sp.

Face and tuft creamy white, the latter with brownish yellow scales interspersed. Antennae whitish, narrowly annulate with brownish yellow. Thorax and forewings creamy white. The wings are considerably overlaid with brownish ocherous scales, arranged in rather ill-defined patches and bands. These are four in number; the first is a broad patch near the base of the dorsal margin, not attaining the costa; the second and third are oblique bands, of which the former attains the dorsal margin near the middle, the latter at the tornus; the fourth is a large patch at the apical fourth of the costa extending nearly across the wing. These patches and bands often blend into one another. The

thorax and forewings are sparsely peppered with minute brown dots. On the dorsal margin, at the internal margin of the first band is a small patch of black-tipped raised scales. There are a few black scales at the apex of the wing, and a semi-circle of brown scales in the middle of the apical cilia. Hind wings and cilia pale ocherous. Abdomen and legs pale ocherous, the latter densely dusted outwardly with dark brown scales. Expanse: 8 mm.

Eleven specimens; Mills College, Alameda County, Cal., May 20th to June 17, 1908. This species bears considerable resemblance to some of the Eastern oak-feeding species.

Co-types in the California Academy of Sciences, in Mr. Kearfott's and in my collection.

Bucculatrix variabilis n. sp.

Face and head whitish, the tuft with varying proportions of gray and brown scales, so that in the darker specimens, it is better described as fuscous. Antennae white, annulate with black. Ground color of the thorax and forewings white, more or less dusted with fuscous scales, the wings toward the apex being overlaid with pale yellowish brown scales. In the dark specimens the dusting is so dense that perhaps the wings are more clearly described as fuscous with white costal and dorsal streaks. Just before the middle, is a pair of oblique white streaks meeting at an acute angle nearer the costa. At the apical third is an almost perpendicular white costal streak meeting, in the middle of the wing, the apices of two dorsal streaks, of which the anterior one is oblique pointing backward and parallel to the first dorsal streak, the posterior one oblique pointing forward from beyond the tornus. On the dorsal margin, between the first and second dorsal streaks, the dusting is very dark, almost black, forming a quadrate spot extending nearly half way across the wing. Just preceding the apex are a few white scales, sometimes forming a semi-circular streak enclosing the apex. A black apical dot and a line of dark scales in the cilia around the apex. Sometimes the white ground color predominates; in this case, the dusting below the fold is rather evenly scattered, but a little darker between the first and second white streaks; above the fold the dusting toward the base is altogether lacking; there is a dark streak of scales forming the internal border of the first white costal streak; a similar, but more scattered patch beyond this white streak. The apical part of the wing is more yellowish brown in the light form, due to the comparative absence of the dark dusting. Hind wings varying from very pale to darker gray; their cilia concolorous. Abdomen and legs gray, tarsi white at the bases. Expanse, 6.7-7.8 mm.

Described from four bred specimens and a number of captured specimens; all from Mills College, Cal., the latter were captured March 25, 1908, the bred specimens emerged from April 25th to May 12th. The food plant belongs to the *Amaranthaceae,* and is probably a species of *Cladothrix.*

Type in my collection; paratype in the California Academy of Sciences.

Bucculatrix transversata n. sp.

Face whitish, speckled with brown; tuft brown intermixed with white in front and toward the sides. Antennae grayish broadly annulate with dark brown. Thorax brown. Forewings brown, except along the costal edge and termen, where they are whitish, and dusted with dark fuscous. At the apical third, this dark dusting is a little more dense and extends a little inward onto the brown ground color. Beyond this the dusting is scattered, and just before the apex the white border is enlarged into a triangular undusted spot. On the middle of the dorsal margin is a narrow, half-crescent shaped patch of raised black scales, with one or two white scales before it, and a few scattered black scales behind it. A straight transverse streak of black scales across the apical cilia. Cilia gray. Hind wings and their cilia also gray. Abdomen shining gray, paler beneath. Legs gray, tarsi tipped with black. Expanse: 7 mm.

Described from a specimen bred on leaves of *Ambrosia psylostachya* D. C., collected by Mr. G. R. Pilate at Rivera, Los Angeles County, Cal. The larva feeds on the upper side, consuming irregular patches. Pupation took place the latter part of October, the imago appeared December 5th.

Type in my collection.

Gracilaria reticulata n. sp.

Labial palpi pale yellow with a broad brownish red band in the middle of each of the two last joints. Head yellow with a few brownish red scales. Antennae whitish, annulate with black, the annulations becoming broader toward the tip. Thorax pale yellow, patagia brownish red. Forewings pale yellow, with the costal half reticulated with brownish red. A band of this red color starts at the basal fifth of the costa and crosses the wing obliquely to the fold where it meets a similar band curving up from the base of the dorsum. The band then continues to the dorsum, where it is angulated and returns again to the fold. This band then continues in a slightly wavy outline to the apex, giving off on its dorsal side, three brownish red bars, of which the

first reaches the margin just beyond the middle, the second at the tornus, the third beyond it. The third is also produced to the costa as a much broader bar. Cilia yellowish red opposite the red streaks and bars. Hind wings and cilia pale reddish gray. Abdomen yellowish gray. Anterior legs brownish red, except the tarsi; middle and hind legs pale yellowish shaded with red, all the tarsi whitish, tipped with brown. Expanse, 14.5-15 mm.

Described from five specimens from Mills College, Cal., two of which are bred. The bred specimens emerged January 30-31, 1908; the captured specimens are dated February 9th, March 25th, June 5th, respectively. A very distinct and beautiful species.

The larva rolls under the apex of leaves of *Quercus agrifolia* Nee. The cone, which is formed of a single fold, is often remarkably perfect. Its free edges are securely spun to the under side of the leaf. I have not observed the larva during the leaf-mining period, but have noticed an untenanted mine, on the under side of a leaf, which probably belongs to this species. The cocoon is spun on the upper side of a leaf across the midrib and has numerous strands of silk stretched across above it.

Types in my collection.

Gracilaria palustriella n. sp.

Labial palpi yellowish, dusted with dark brown. Head brownish, antennae whitish, annulate with brown. Thorax brownish. Forewings with the ocherous ground color for the most part overlaid with reddish brown scales, especially in the costal half. These scales are densest around the borders of the pale whitish costal spot. This spot is somewhat produced along the costa toward the apex, and has some reddish scales scattered over it and six or seven black dots on its costal edge. On its dorsal side, a pale indistinct streak curves from it to the dorsal margin, resulting in the internal edge of the spot being convex, the external edge deeply concave. Cilia yellowish, with three or four dark lines running through them from the apex to the tornus. Hind wings gray, their cilia paler and reddish. Abdomen gray. Anterior legs reddish brown, except the tarsi which are whitish, tipped with black. Middle and hind legs grayish. Expanse: 13.7 mm.

Described from a specimen bred from mines on leaves of a species of *Salix,* from Mills College, Cal.; mines collected at

the beginning of June; the imago appeared July 25th. The later larval habits are very similar to those of *G. salicifoliella* Cham. The larva enters the leaf by means of a lunate slit on the under side, and makes a large flat upper surface mine. It later deserts this mine to form a new one. At no period of its larval existence is it a leaf-roller. This sharply distinguishes it from *G. stigmatella* Fab., which the imago in many respects resembles. The larva spins an oval, flat, somewhat glaucous silk cocoon on either the upper or lower side of the leaf.

Type in my collection.

The Larva of Eumaeus atala.

By John L. Healy, Chicago, Ill.

That the larva of so common a butterfly as is *E. atala* about Miami, Florida, should be overlooked is rather remarkable. On the rock ridge, some three miles wide, between Biscayne Bay and the Everglades, where the principal features of the flora are jack-pine and palmetto, this beautiful little black and orange creature is very abundant. My trip to Miami was solely on business and no time was available for strictly entomological pursuit. While on my way to the Everglades to inspect some land in the company of unscientific and unsympathetic persons, I observed such numbers of this species that I prevailed upon my companions to spend a few minutes watching me catch a few. I am always armed with a folding net and a cyanide jar. Noticing the female ovipositing on a species of fern I determined that some brightly colored larvae on the same plant were probably the larvae of *atala*. I secured two, and also three pupas, so closely resembling the larvae that no mistake could be made. Eggs, larvae, pupae and imagoes were all present in great numbers. I had no glass with which to observe the eggs, nor any proper receptacle in which to carry them, so made no detailed observations.

The mature larva is about one inch in length, robust, bright vermilion red in color; thorax much lighter, yellowish, semi-

translucent; head small, in color like thorax; true legs black, prolegs short, yellowish. As a whole the caterpillar is rather slug-like. The first seven abdominal segments have each a pair of clear yellow, ellipsoid, semi-lunate spots, bearing tubercles and spines, these spots being arranged in a double row along the dorsum. There is a second row of tubercles and spines midway between median line and the spiracles.

Pupa is 13 to 15 mm. in length, 3 to 5 mm. in diameter over thoracic and abdominal portions respectively, slightly pitted. When larva-skin is first cast the pupa is of same color as larva, preserving the two rows of bright yellow spots now much more quadrate. In a short time the general color becomes much more mahogany brown and the whole surface except for the rows of spots mentioned, is thickly sprinkled with black dots. Two days before emergence the wing covers become dull black, heralding the approach of the final change. The pupa is suspended by a band of silk fastened on the back at base of thorax, extending to a point opposite the head; abdomen free, not attached. These pupae can be seen fastened to the food plant and also to every plant within 15 inches of the ground. Pupal period, 20 to 22 days.

No opportunity presented itself to secure an identification of the food-plant, owing to my very hurried work. I spent about half an hour and secured the larvae mentioned together with 35 imagoes.

A New Gall-making Psyllid on Hackberry.

By T. D. A. Cockerell.

Pachypsylla rohweri n. sp.

Structure and venation as in *P. celtidis-mamma* Riley, but anterior wings milky-hyaline, with pale yellowish veins and brownish-black markings, consisting of numerous scattered dots, a large irregular spot or patch just below the origin of the radial sector, an oblique band beginning at the end of the stigma and passing downwards and inwards, to end in an enlargement between the branches of the cubitus, and finally a broad band, on which are three hyaline spots, along the outer margin. The area between the two bands may be regarded as a hyaline band

(more or less dotted between the veins), which is broad above and narrows below, and correspond to the light band in *P. celtidis-mamma.* The lower margin is black with hyaline interruptions, somewhat as in *P. celtidis-mamma.* Hind wings milky-hyaline. Head dull, granular, middle of front blackish, sides very broadly dull ochreous, a black dot on each side of the middle; in the middle line, between the antennae, is a dot of scarlet; antennae with the first two joints thickened, the first fuscous; last joint intense black; intermediate joints yellowish-white, white dusty apices; thorax above dull or moderately shining, strongly clouded with brown, with a fine median pale line; legs dull pale grayish-ochreous, the femora slightly marked with darker. Length of anterior wing about 2¼ mm.

Galls crowded on underside of leaf of *Celtis reticulata* Torrey; about 6 mm. diameter, elevated, mammiform, with a long nipple-like protuberance.

Mr. S. A. Rohwer collected the galls at Boulder, Colorado (where I have also found them), and bred the adults August 30, 1907. We both studied them at the time, but lacked some of the necessary literature, which has been kindly supplied by Dr. L. O. Howard.

The only other *Pachypsylla* known from Boulder County is *P. celtidis-gemma,* Riley, determined by Mr. Schwarz. The single specimen was found by my wife squashed in a book borrowed from the Boulder public library; it is therefore just possible that it did not come from Boulder.

Mr. Henry H. Lyman, of Montreal, Canada, has sent us a copy of the "American Examiner" which contains an article on butterflies and he says it is the biggest thing in Newspaper Entomology he has seen. It begins as follows: "Within the past fifty years over a billion dollars worth of butterflies have been caught by butterfly hunters and sold to collectors. So extensive is this industry at the present time that it may be safely asserted that over twenty million dollars a year are spent on these beautiful insects." It then goes on to tell of species worth from one hundred to a thousand dollars each. No wonder there is a duty on insects in this country. In Canada the late Dr. James Fletcher had the duty removed from specimens that were imported for study by entomologists but we in the United States are not so fortunate. We hope that members of Congress won't see the article mentioned the next time the tariff is revised.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

TO CONTRIBUTORS.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., APRIL, 1910.

We have received the following letter from a former subscriber and, as it is like some others we have received, it may prove enlightening to comment on it. We are glad to get such letters as we always try to improve the NEWS and please our subscribers whenever it is possible.

"I suppose you would like to know why I have not sent in my subscription for this year. I deeply regret that in the past few years there has been so little in it along the line of my work, Lepidoptera. I have been hoping you would print something on the Noctuidae. It seems to be devoted to orders other than Lepidoptera. I know you can't cater wholly to this branch but if you could give only one plate a month figuring Noctuids not in Holland's Moth Book, especially moths of the eastern United States, it would be a great help to we amateurs who have no State collection or others to help us identify our specimens. I, for one, do not like to bother specialists to name my specimens."

It would be interesting to go over the NEWS for the last five years and see what proportion of the journal has been devoted to Lepidoptera. If there is less on Lepidoptera than formerly that is the fault of the Lepidopterists, as the editors do not write the NEWS but only edit it. Now suppose we take our Eastern Noctuidist seriously and give him a three color half-tone each month. The cost of such a plate would be $50 and the cost for the volume would be $500. Now will our former subscriber

kindly tell us where we are to get the $500 to supply ten colored plates of Noctuidae? If we took so much from the resources of the NEWS, where would the Western Noctuidist come in and the Dipterist and Coleopterist and the other orders of insects? Why, it is quite a feat to make an entomological journal live, let alone supply the wants of each individual. If better support were given it would improve things very materially, but refusing to subscribe does not buy any kind of plates. The proper thing to do would be to have a journal of entomology at a subscription price of $5 a year and then it would be a credit to the study.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

DIXIE'S CRICKETS CHIRRUP ON.—Altoona, Pa., Feb. 5.—The Chirrup of crickets enlivens the night in the vicinity of the Pennsylvania Railroad's big transfer sheds here. There seems to be quite a lot of them. Transfer men believe they were brought here from the South on a freight car.—*Newspaper.*

Crickets hibernate in the adult stage. If you want to find a big lot of big fat crickets—in the winter time, just visit the "Entomologists' Clubhouse," at Anglesea, N. J. In the summer time, there is not one (?) in the house, but just as soon as the nights grow cold they start to come in by ones and twos. "A word to the wise is sufficient" (generally, but not always); don't leave your old flannel shirts and coats in your locker over the winter months. If you wish to hear crickets sing (?) in winter time, go down to the old clubhouse at Anglesea, N. J. Start up the fire in the big stove in the front room; draw up a chair towards the stove; put up your "props"—feet—; lean back in your chair; light up your pipe or cigar, and just about the time you are ready to fall into the arms of Morpheus your alarm clock (crickets) will go off. The house is now warm, and it is about time you woke up and looked after the old flannel shirt and old coat that you placed in your closet last October—every garment a sieve—particularly the flannel shirt—and nothing in the pockets of your old coat except—great, big, fat crickets.—PHILIP LAURENT...

A FEW NOTES ON ORTHOPTERA FOUND DURING THE EARLY SPRING AND LATE FALL ABOUT NEW HAVEN, CONNECTICUT.—As early as the first of June in an average season, I have found that practically no adult specimens of Orthoptera can be found in this region, but by the middle of that month adults of a number of species may be secured.

The following series, collected on June 15th, 1908, may be taken as a fairly good indication of the species which occur the earliest in this region. All were captured on the hillsides, scantily clothed with grasses and raspberry vines, on the Connecticut State rifle range, a few miles from New Haven. At this time other localities revealed no adult Orthoptera.

Eritettix simplex Sc. 6 male, 6 female. All these specimens were fresh, and a number of the females were still soft. In this region this species is very local in distribution, and I have never found it plentiful. This series was taken only by long continued search.

Chloealtis conspersa Harr. 3 nymphs.

Arphia sulphurea Fabr. 3 male, 2 female.

Chortophaga viridifasciata DeG. A few fresh specimens.

Hippiscus tuberculatus Palis. 1 male, 1 female.

Melanoplus minor Sc. 4 male recently emerged from the imago.

After the frosts have begun in the Fall, I have searched about New Haven to discover which species of Orthoptera were the latest to survive. On the steep slopes of West Rock a few specimens of *Melanoplus deletor* Sc. Nowhere else was Orthoptera present except in the grassy flats near the tidal marshes. In this situation, however, the following species were found as late as the end of October.

Chorthippus curtipennis Harr. Plentiful and most of the specimens still in good condition.

Melanoplus femur-rubrum De G. Plentiful but all in somewhat bad shape.

Melanoplus femoratus Burn. Scarce and in very poor condition.

Gryllus luctuosus Serv. In few numbers and all much tattered.

Nemobius fasciatus DeG. Numerous and in good condition.

shape.—MORGAN HEBARD.

EVERES COMYNTAS AND AMYNTULA AGAIN—A SECOND APPEAL.—Several American Entomologists were kind enough to respond to my appeal last year for specimens and to help in unravelling the distribution of these two insects, but I have not yet got to the bottom of it.

Comyntas appears to fly right across the Continent up to California, for Mr. Williams notes (ENT. NEWS, 1909, p. 70) that he took both *comyntas* and *amyntula* on the same ground near Mount Shasta, and he has written to me confirming this; if the two species are here quite distinct, it is very interesting and points to their definite separation. I should be most grateful for specimens taken off the same ground, especially when flying simultaneously. I am told that *amyntula* only has two broods which are distinct, while *comyntas* has a succession of broods from May to the end of September.

I am very anxious to get a series of each butterfly from Nevada,

Oregon and Utah, in return for which I shall be glad to send European species with a few exotics.

Will observers on your side of the water help me again? I shall be very grateful if they will.—G. T. Bethune-Barker, 19 Clarendon Road, Edgbaston, England.

A CONVENTION OF ENTOMOLOGISTS AT THE HOME OF DR. WM. BARNES, DECATUR, ILL.—There were just twenty-two persons who enjoyed the hospitality of Dr. Wm. Barnes, at his home, which is in Decatur, Ill., Sunday, January 16, 1910. They came from all directions of the compass; their aim being to view and study the splendid collection of North American Lepidoptera owned by the doctor.

A delegation arrived from St. Louis early Saturday evening. They were Prof. J. F. Abbott, Messrs. Ernst Schwarz, L. M. Dougan, Phil. Rau, and Hermann Schwarz. During the night Prof. R. R. Rowley arrived from Louisiana, Mo. Early Sunday morning this group left the St. Nicholas Hotel, at Decatur, for the doctor's home. There they found Messrs. John L. Healy, Wm. Gerhard, Emil Beer, John Kytlica and Alex. Kwiat, all of Chicago, also Mr. John A. Grossbeck, of New Brunswick, N. J., Richard Lange, of St. Louis, A. F. Porter, Decorah, Iowa, and Messrs. J. McDunnough, and Paul Welch, the last two being the curators of the Barnes collection. Mr. Otho C. Poling, of Quincy, Ill. put in his appearance later in the morning—he having been reluctantly detained at the hotel by Morpheus who simply would not let him depart from his generous embrace, until aroused by a sense of duty to his fellow-men he tore himself loose with main and might and thus made his dramatic appearance amongst us.

There was plenty to talk about and much to see, so the morning passed all too fast. A luncheon prepared and served under the able direction of the amiable mistress of the house, Mrs. Barnes, was enjoyed royally at the noon hour. Exit dining room—we enter the library and museum where, under the influence of the glorious aroma of good cigars, we are made to feel the happiness and bliss which comes from a close association of men whose aims are of a like character.

At this stage enter the delegation from the Illinois State University, which is in Urbana, Ill., consisting of Messrs. Chas. A. Hart, James Zetek, R. A. Glasgow and J. Douglas Hood, also Prof. T. W. Galloway, of Millican University of Decatur.

It was suggested that a formal session be held. Everybody present concurred in this opinion.

MINUTES.

Mr. John L. Healy was unanimously elected chairman and Hermann Schwarz secretary. The session was opened at 2.45 P. M. Upon opening the session all present signified by a rising vote their thanks to Dr. Barnes for the courtesies extended.

It was agreed that each one present report on the work and progress

of the organization he represents or on the investigations he may have made or is making at the present time. Prof. J. F. Abbott was called and spoke on the work done by the Entomological Section of the Academy of Science of St. Louis. He also urged the need of joint field meets and moved that a committee of three be appointed by the chair to arrange for a meeting during the summer of 1910. The chair appointed Prof. J. F. Abbott of St. Louis, Mr. Alex. Kwiat of Chicago, and Prof. R. R. Rowley of Louisiana, Mo. to serve on this committee. Mr. Alex. Kwiat spoke on the work of the Entomological Section of the Chicago Academy of Science. Mr. Chas. A. Hart made a few remarks regarding the work done at the Illinois State University. Mr. John A. Grossbeck enlightened those present on the happy and prosperous condition of the New York and Brooklyn Entomological Societies.

Prof. R. R. Rowley gave vent to his good feelings with regard to the meeting. He urged the need of good field work as well as the accurate recording of observations while breeding insects. Mr. John L. Healy spoke along the same line. Mr. A. F. Porter spoke of his work done at Decorah, Iowa, during the past five years. Mr. Otho C. Poling made some remarks touching his work in Arizona. He also suggested that the field meet of 1910 be held at Quincy Ill., setting forth the advantages of his home town in more ways than one. Mr. J. McDunnough advocated that more work be done in observing and recording the life histories of insects in America, stating that a great deal of that work is being done at the present time by Entomologists in Germany. Mr. Hermann Schwarz outlined the manner of meetings and work of the St. Louis Entomological Club. Dr. Wm. Barnes gave it as his opinion, that a good many of the descriptions of insects made today are inaccurate and deplored the inconsistency of some authorities in identifying material. Messrs. Healy, Poling and Kwiat urged that collectors place unique types in the hands of some one who has a secure, fire-proof place for storing them. Mr. Phil. Rau gave an outline of his work on *Samia cecropia*, stating that the Academy of Science of St. Louis is at present publishing his results. Prof. T. W. Galloway told of his work done at the Millican University of Decatur, Ill., with which he is connected. It was voted that a copy of the minutes of this meeting be sent to the ENTOMOLOGICAL NEWS for publication. No further business the session adjourned at 4.45 P. M.

In closing it must be mentioned that to cap the climax of the generosity on the part of Dr. Barnes, he threw open the cases containing duplicates and invited everyone to help himself. Late Sunday evening the guests departed for home, conscious of having spent a happy day among most congenial colleagues and with a most hospitable and amiable host and hostess.—HERMANN SCHWARZ.

A NEW TRUST.

By C. N. Ainslee.

We are getting used to paying
For to keep the hens a laying,
And to help the Beef, Oil, Sugar Trusts to live;
But it comes a good deal harder
Than to fill a high-priced larder,
When for "bug lore" we a double price must give!

Even chinch bugs work for small pay
So do green bugs, hoppers, and they
Never strike for shorter hours or better use:—
But this man whose name is Skinner,
Is a fierce financial sinner,
And he makes us pay two prices for Ent. News.
(But we have to have it.)

Entomological Literature.

COMPILED BY E. T. CRESSON, JR., AND J. A. G. REHN.

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), excluding Arachnida and Myriapoda. Articles irrelevant to American entomology, unless treating of new genera, will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species, will be recorded. The numbers in **Heavy-Faced Type** refer to the journals, as numbered in the following list, in which the papers are published, and are all dated the current year unless otherwise noted. This (°) following a record, denotes that the paper in question contains description of a new genus; while this (*), that of a new North American form.

For complete record of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington.

4—The Canadian Entomologist. **5**—Psyche, Cambridge, Mass. **7**—U. S. Department of Agriculture, Bureau of Entomology. **8**—The Entomologist's Monthly Magazine, Lond. **9**—The Entomologist, London. **10**—Nature, London. **11**—Annals and Magazine of Natural History, London. **12**—Comptes Rendus, L'Academie des Sciences, Paris. **19**—Horae Societatis Entomologiae Rossicae. **22**—Zoologischer Anzeiger, Leipzig. **24**—Berliner Entomologische Zeitschrift. **25**—Bolletino, Musei di Zoologia ed Anatomia Comparata d. R. Universita di Torino. **35**—Annalen, Societe Entomologique de Belgique. **38**—Wiener Entomologische Zeitung. **40**—Societas Entomologica, Zurich. **44**—Verhandlungen, K. k. zoologisch-botanischen Gesellschaft in Wien. **50**—Proceedings, U.

S. National Museum. **55**—Le Naturaliste, Paris. **69**—Bolletino, Societa Italiana Entomologica. **81**—Biologisches Centralblatt, Erlangen. **84**—Entomologische Rundschau. **92**—Zeitschrift fur wissenschaftliche Insektenbiologie, Berlin. **97**—Zeitschrift fur wissenschaftliche Zoologie, Leipzig. **167**—O Entomologista Brasileiro, S. Paulo, Brizil. **179**—Journal of Economic Entomology. **180**—Annals, Entomological Society of America. **193**—Entomologische Blater, Nurnberg. **204**—New York State Museum Bulletin. **206**—Annals, Scottish Natural History, Edinburgh. **207**—Anales, Academia de Ciencias Medicas, Fisicas y Naturales de la Habana, Revista Cientifica. **208**—Boletin, Real Sociedad Espanola de Historia Natural, Madrid. **209**—Transactions, Zoological Society of London. **210**—Transactions and Proceedings, Royal Society of South Australia. **211**—Popular Science Monthly, Lancaster, Pa. **212**—Casopis, Acta Societatis Entomologicae Bohemiae. **213**—Transactions, Natural History Society of Northumberland, Durham, and New Castle-upon-Tyne, (new series). **214**—Naturwissenschaftliche Zeitschrift fur Forst-und Landwirtschaft, Stuttgart. **215**—Bulletin, Georgia State Board of Entomology. **216**—Entomologische Zeitschrift, Stuttgart. **217**—Bulletin, Societe Entomologique d'Egypte. **218**—Mikrokosmos. Zeitschrift fur die praktische Betatigung aller Naturfreunde. Stuttgart. **219**—Abhandlungen, Math.—Physik. Klasse d. Konig. Bayerischen Akad. der Wissenschaft, Munchen. **220**—New Jersey Agricultural Experiment Station, New Brunswick, N. J.

GENERAL SUBJECT. Anon.—De destruicao das pragas de gafanhotos, lagartas, etc., **167,** ii, 370, 1909. **Banks, N.**—A list of works on No. American Entomology, **7,** Bull. No. 81. **Britton, W. E.**—The official Entomologist and the farmer, **179,** iii, 12. **Felt, E. P.**—Control of flies and other household insects, **204,** No. 136. **Fiske, W. F.**—Superparasitism: an important factor in the natural control of insects, **179,** iii, 88. **Handlirsch, A.**—Die fossilen insekten und die Phylogenie der rezenten formen, **24,** liv, 145, 1909. **Holdhaus, K.**—Die siebetecknik zum aufsammeln der Terricolfauna (nebst bemerkungen ueber die Oekologie der im Erdboden lebenden Tierwelt), **92,** vi, 1, 44. **Ihering, R. von**—Necessidades do estudo dos insectos uteis e damninhos, **167,** iii, 1. **Kleine, R.**—Kleine mitteilungen aus meinem vivarium. (Notes on parasitism), **40,** xxiv, 161, 169. **Kuster, E.**—Ueber organoide Gallen, **81,** xxx, 116. **Lewis, A. C.**—Apple insects, **215,** No. 30, 21, 1909. **M., P.**—Os insectos nocivos. O Gafanhoto, **167,** ii, 362, 1909. **Phillips, J. L.**—Seventh report of the State Entomologist and Plant Pathologist of Virginia, 1908-09, Richmond, Va. **Rothke, M.**—Ein Fruhlingstag im pennsylvanischen Walde, **216,** xxii, 185, 189, 193, 198. **Shaw, N.**

E.—Increasing the demand for orchard inspection, **179,** iii, 77. **Smith, J. B.**—Insects and Entomologists: their relations to the community at large, **211,** lxxxvi, 209; **180,** iii, 12. Insects injurious to sweet potatoes in New Jersey, **220,** Bulletin, No. 229. **Waase, K. O.**—Die flugorgane der Insekten, **218,** iii, 216. **Washburn, F. L.**—The work of the Association of Horticultural Inspectors, **179,** iii, 69. **Worsham, E. L.**—Peach insects, **215,** No. 30, 104, 1909.

APTERA. Bagnall, R. S.—On some new and little-known exotic Thysanoptera, **213,** iii, 524, 1909 (°). **Becker, E.**—Zum bau des postantennalorgan der Collembolen, **97,** xciv, 327. **Mitzmain, M. B.**—Some new facts on the bionomics of the California rodent fleas, **180,** iii, 61.

NEUROPTERA. Banks, N.—Myrmeleonidae from Australia, **180,** iii, 40 (°). **Enderlein, G.**—Ueber die phylogenie und klassifikation der Mecopteren unter berucksichtigung der fossilen formen, **22,** xxxv, 385 (°). **Forster, F.**—Beitrage zu den Gattungen und arten der Libellen, **38,** xxix, 51 (°). **Leger et Hesse**—Cnidosporidies des larves d'Ephemeres. (Note), **12,** 1910, 411. **McDunnough, J.**—Ueber den bau des darms und seiner anhange von Chrysopa perla, **19,** lxxv, 313, 1909. **Reis, O. M.**—Handlirschia gelasii nov. gen. et spec. aus dem Schaumkalk Frankens, **219,** xxiii, 661, 1909 (°). **Wasmann, E.**—Ueber das wesen und den ursprung der Symphilie (173 Beitrag zur kenntnis der Myrmekophilen und Termitophilen), **81,** xxx, 97.

ORTHOPTERA. Borelli, A.—Forficole nuove o poco note di Costa Rica, **25,** xxiv, No. 611 (*). **Rosenfeld, A. H.**—Blattid notes, **179,** iii, 100. **Zacher, F.**—Zur Morphologie und Systematik der Dermapteren. (Continued), **84,** xxvii, 24, 29.

HEMIPTERA. Bergroth, E.—On some Miridae from French Guiana, **35,** liv, 60 (°). **Cockerell, T. D. A.**—A new wax-scale from Argentine, **4,** xlii, 74. **Cooley, R. A.**—Notes on spraying experiments for the oyster shell scale in Montana, **179,** iii, 57. **Distant, W. L.**—Some undescribed Gerrinae, **11,** v, 140 (°). **Ihering, R. von**—Phloca paradoxa ou Phoea longirostris, **167,** iii, 18. **Kershaw, J. C. W.**—On the metamorphoses of two Coptosomine Hemiptera from Macao, **35,** liv, 69. **Kirkaldy, G. W.**—A note on Mr. Jackson's synopsis of the genus Pemphigus, **4,** xlii, 83. **Nusslin, O.**—Neuere ergebenisse der Chermes forschung, **214,** viii, 65. **Severin, H. H. P.**—The San Jose scale and its relation to climatic districts or life zones in Wisconsin, **179,** iii, 101.

LEPIDOPTERA. Ainslie, G. G.—The larger corn stalk-borer (Diatiaea saccharalis), **7,** Circular, No. 116. **Atwood, G. G.**—Brown-tail moth on imported nursery stock, **179,** iii, 71. **Burgeff, H.**—Beitrage zur biologie der gattung Zygaena, **92,** v, 39. **Burgess,**

A. F.—Some insecticide methods used in combating the gypsy moth, **179,** iii, 38. **Chittenden, F. H.**—Control of the Mediterranean flour moth by hydrocyanic-acid gas fumigation, **7,** Circular, No. 112. **Cockle, J. W.**—Syntomid moths with bananas, **4,** xlii, 95. **Dampf, A.**—Ueber Agrotis tecta und "var. (ab.)" cinerea, **24,** liv, 128, 1909. **Fruthslorfer, H.**—Die Grossschmetterlinge der Erde Fauna indo-australica. (Parelodina) n. g. Hauptteil 2, Exotica Abeteil. 2, Leif. 22. **Gillette, C. P.**—New sprays for the codling moth, **179,** iii, 29. **Heron, F. A.**—Ruwenzori Expedition reports. 12. Lepidoptera Rhopalocera, **209,** xix, 141, 1909 (°). **Meyrick, E.**—Change of name of genus Epibactra to Parabactra, **8,** xxi, 72. **Morton, R. J.**—Life-history of Drepanepteryx phalaenoides, **8,** xxi, 55. **Rane, F. W.**—Present conditions of the gypsy and brown-tail moth work in Mass., **179,** iii, 36. **Rangnow, H.**—Zur kenntnis der lebenweise von Pamphila silvius, **24,** liv, 227, 1909. **Reiff, W.**—Notes on Hemileuca lucina, **5,** xvii, 29. **Strand, E.**—Schmetterlinge aus dem Sambesi-Gebiet, gesammelt und dem Berliner Museum geschenkt von Herrn F. Seiner, **19,** lxxv, 375, 1909 (°). **Taylor, G. W.**—Descriptions of new species of Eupithecia from Eastern America, **4,** xlii, 77 (*). On some new species of Mesoleuca allied to M. hersilata, **4,** xlii, 85 (*).

DIPTERA. Bezzi, M.—Brasilianische Lonchaeiden gesammelt von A. A. Barbiellini, **167,** iii, 20. **Brues, C. T.**—A peculiar type of Phoridae from Natal, **5,** xvii, 33, (°.) **Corti, E.**—Contributo alla conascenza del gruppo delle "Crassisete in Italia," **69,** xl, 121, 1909. **Felt, E. P.**—Observations on the house-fly, **179,** iii, 24. **Hendel, F.**—Ueber acalyptrate Musciden, **38,** xxix, 101 (°). **Hermann et. Villeneuve**—Bibliographie des travaux entomologiques relatifs a l'Egypte. Dipteres, **217,** 1909, 138 (°). **Johnson, C. W.**—A revision of the species of Agathomyia of the Eastern U. S., **5,** xvii, 7. **Lanhoffer, A.**—Blutenbiologische beobachtungen an Dipteren, **92,** vi, 14, 57. **Malloch, J. R.**—Scottish Phoridae, with tables of all the British species, and notes of localities. (Continued), **206,** 1910, 15 (°). **Pazos, J. H.**—Descripcion de nuevas especies de mosquitos de Cuba, **207,** xlv, 417, 1908 (*). **Sanderson, E. D.**—Controlling the black-fly in the White Mountains, **179,** iii, 27. **Stein, P.**—Die von Thomson beschriebenen Anthomyiden der Eugenies Resa, **38,** xxix, 66. **Villeneuve, J.**—Etudes dipterologiques, III A propos de quel ques Tabanus types de Brauer, **38,** xxix, 79. Dipteres nouveaux (Calanemorilla n. g.), **38,** xxix, 87 (°). **Vimmerz, A.**—Larva bedlobytky Cordyla fusca, **212,** vi, 148, 1909. **Wellman, F. C.**—Unusual parasitic habits of an African Ephydrid (translation), **5,** xvii, 8. **Williams, F. X.**—The anatomy of the larva of Cecidomyia resinicoloides, **180,** iii, 45.

COLEOPTERA. Bernhauer, M.—Zur Staphylinedenfauna von Sudamerika. 6. Beitrag, **69,** xl, 225, 1909 (°). **Blackburn, T.**—Further notes on Australian Coleoptera, with descriptions of new genera and species, **210,** xxxiii, 18, 1909 (°). **Gahan, C. J.** et al.—Ruwenzori expedition reports 14. Coleoptera, **209,** xix, 185, 1909 (°). **Gunther, E.**—Biologisches ueber Dytiscus marginalis, **24,** liv, 176, 1909. **Hinds, & Turner**—Carbon di-sulfid fumigation for the rice weevil in corn, **179,** iii, 47. **Jeannel, R.**—Contribution a l'etude des Silphides cavernicoles d'Espagne, **208,** ix, 462, 1909 (°). **Kerremans, C.**—Monographie des Buprestides. Tome iv, No. 5-6. **Kleine, R.**—Die Lariiden und Rhynchophoren und ihre nahrungspflanzen, **193,** vi, 42. **Olivier, E.**—Coleopterorum catalogues. Pars. 9. Lampyridae; Pars 10. Rhagophthalmidae, Drilidae. **Pic, M.**—Descriptions de Cantharides (Telephorides) Americains nouveaux, **55,** xxxii, 43 (*). **Reitter, E.**—Siagonadia, nov. subgen. von Macrosiagon, **38,** xxix, 131. **Smith, J. B.**—Amara avida as a strawberry pest, **179,** iii, 97. **Spaeth, F.**—Beschreibung neuer Cassididen nebst synonymischen bemerkungen, **44,** lix, 364 (°). **Sternberg, C.**—Neue Dynastiden-arten, **35,** liv, 33. **Tremoleras, J.**—Coleopterologische skizze von Uruguay, **193,** vi, 39. **Van Roon, G.**—Coleopterorum catalogus Pars 8. Lucanidae, 1910. **Wassmann, E.**—Staphylinusarten als Ameisen-rauber, **92,** vi, 5, 37. **Wildermuth, V. L.**—The clover-root Curculio. (Sitones hispidulus), **7,** Bulletin, No. 85, pt. 3. **Xambeu, C.**—Moeurs & metamorphoses des Coleopteres de la tribu des Chrysomeliens, **55,** xxxii, 41. **Yathers, M. A.**—Notes on Lixus marginatus, **4,** xlii, 69.

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Ueber den ursprung des sozialen parasitismus, der sklaverei und der myrmecophilie bei den Ameisen, **22**, xxxv, 450. **Webster & Reeves**—The western grass-stem saw-fly (Caphus occidentalis), **7**, Circular, No. 117.

Doings of Societies.

The twenty-second annual meeting of the American Association of Economic Entomologists was held at the Harvard Medical School, (Brookline) Boston, Mass., December 28 and 29, 1909. The first session was called to order by President W. E. Britton, of New Haven, Conn., who presided throughout the meeting and who delivered the annual address on "The Official Entomologist and the Farmer." The program was crowded with papers which were of great economic importance to the entomologist and the agriculturist, although a few were more technical in character and dealt with some of the fundamental principles of scientific investigation of entomological matters. A discussion of different methods used in research work was of particular interest, as were also the reports of the progress that is being made in the field and parasite work in New England for the purpose of controlling the gypsy and brown-tail moths. A report by Dr. W. P. Headden, of Colorado, concerning the injury to fruit trees caused by arsenical spraying and the discussions that followed brought out many new ideas on this important subject. An exhibit made by the local entomologists and members which was held in an adjoining room contained samples of apparatus and breeding devices, as well as insect collections, which added much interest to the meeting. On Tuesday evening the association and the Entomological Society of America were the guests of the Cambridge Entomological Club, and on Thursday morning the members had the opportunity of witnessing a spraying demonstration at Arlington with high-power sprayers, as the guests of Mr. H. L. Frost.

The attendance at each session numbered over 100 members and visitors, nearly every section of the United States and Canada being represented.

The association commended the work which is being done to control the gypsy and brown-tail moths in New England, endorsed the bill before Congress to provide for the establishment of standards of purity of insecticides and fungicides, and advocated the passage by Congress of a national law to prevent the importation of dangerously injurious insects and fungus diseases from foreign countries.

The report of the secretary showed that the association was increasing in membership and was in good financial condition. The *Journal of Economic Entomology*, which is the official organ of the association, was also reported by the business manager to be in a thriving condition.

The following officers were elected for the ensuing year: President, Prof. E. D. Sanderson, Durham, N. H.; first vice-president, Dr. H. T. Fernald, Amherst Mass.; second vice-president, Prof. P. J. Parrott, Geneva, N. Y.; secretary, A. F. Burgess, Washington, D. C.

The annual meeting of the Brooklyn Entomological Society was held at 55 Stuyvesant Street, Brooklyn, N. Y., January 6th, with sixteen members and five visitors present.

The following officers were elected unanimously: President, John B. Smith; vice-president, Geo. P. Engelhardt; treasurer, Chris. E. Olsen; corresponding secretary, A. C. Weeks; recording secretary, R. P. Dow; librarian, F. M. Schott; curator, Geo. Franck. John B. Smith was re-appointed delegate to the New York Academy of Sciences.

It was voted to amend the by-laws, making the meetings on the second Thursday after the first Tuesday of each month. This change makes the meeting full nine days later than those of the New York Entomological Society, whereas in the past the meetings were two days apart.

Robert Schmaltz reported that he had mated a *cynthia* and *cecropia* moth, obtaining several hundred fertile eggs. The larvae were distinctive, but all save two died when about half grown. One died in cocoon and one is still alive.

Mr. Dow exhibited three specimens of *Cicindela* from Sullivan County, N. Y., which are greenish brown and which are either a local race of *ancocisconensis* or between that species and *repanda*. No attempt will be made to give it varietal rank until additional material is secured. They are not uncommon but confined to one mountain side. From the same region but 500 feet lower a race of *C. harrisii* was found, many of which were so bronze hued as to suggest a natural hybrid with *purpurea*.

Following the meeting a supper was served and a silver loving cup presented to Christopher H. Roberts, who retired as treasurer after thirty-one years of service.

R. P. Dow, *Recording Secretary*.

The Brooklyn Entomological Society met at 55 Stuyvesant Avenue, February 10th, with eighteen members and three visitors present.

A. E. Allen, a lepidopterist, was elected an active member.

F. H. Wolly Dod, of Calgary, Canada, spoke of his collecting experiences there covering a period of sixteen years. He spoke particularly of *Argynnis astarte*, the fastest flyer of the genus. The males frequent the mountains above the timber line and probably above the limits of growth of violets.

C. H. Roberts read a paper on *Colymbetes*. The genus is divided into three groups, divided by appearance of front and middle tarsi: First, with three rows of hairs and no pallets, *paykulli, longulus, seminiger, obscuratus* (not seen by Leconte, Sharp or Roberts); the second has two rows of pallets and one row of hairs and includes *strigatus, crotchii, exaratus,* and one species from the Yellowstone not yet described; the third group has four rows of pallets and no hairs; it includes *sculptilis, rugipennis, dolobratus, greenlandicus, thomsoni* and three species still undescribed. The tarsal claws present a character by which alone every species can be accurately determined.

R. P. Dow, *Recording Secretary*.

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Wanted for cash or exchange, 2 female and 2 male *Arg. diana;* must be in perfect condition to be acceptable. I have many specimens in papers to exchange.—G. H. Hosenfelt, 3673 S. Broadway, St. Louis, Mo.

Saturnidae—Have always for exchange ova, cocoons or set imagines of Japan, Africa, Ceylon, India and Malayan Saturnidae as *Attacus edwardsi, Actias selene, Caligula japonica, simla* and a new species of *Cricula.* Wanted live cocoons or ova Central American and Mexican *Attacus*, also *luna, colombia, calleta* and *shastaensis.* Old correspondents invited to write.—J. Henry Watson, 70 Ashford Road, Withington, Manchester, England.

Dytiscidae wanted by exchange or purchase Henshaw's numbers 1236, 1239, 1241, 1260, 1271, 1272, 1307, 1311, 1336, 1337, 1341, 1351, 1363, 1373, 1376, 1398, 1407, 1416, 1429, 1450, 1453, 1456, 1070, 1471, 1500, 1503, 1504.—John D. Sherman, Jr., 335A, Decatur St., Brooklyn, N. Y.

Offered—Fine *Parn. apollo, delius, mnemosyne, Arg. paphia, A. aglaia, lathonia, Lyc. coridon, semiargus* and other butterflies. Wanted pupae of Papilios *S. geminatus, astylus, excaecatus, cerisyi, myops*, cocoons of *gloveri*, etc.—J. W. H. Harrison, 181 Abingdon Road, Middlesbro, England.

Coleoptera—Many rare species from the Arkansas Valley, Kansas.—J. C. Warren, Mt. Hope, Kansas.

Coleoptera exchanged for species not represented in my collection. Endomychidae and Erotylidae especially desired.—R. J. Crew, 561 Carlan Ave., Toronto, Canada.

Exchange—Living pupae of *M. modesta, Sph. chersis, A. bicolor, Pap. cresphontes, Pap. asterias* for native or exotic Lepidoptera.—A. Mares, 2517 Homan Ave., Chicago, Ill.

Wanted in exchange, perfect specimens of the genus *Parasemia, Apantesis* and allied groups, also Pieridae and *Catocala.* List of duplicates will be sent on application; also want eggs of *Catocala* for cash or exchange.—M. Rothke, 835 Mathew Ave., Scranton, Pa.

Lepidoptera—Pupae of *cresphontes* and *troilus* to exchange.—F. Malkmus, 3735 Cottage Ave., St. Louis, Mo.

Lepidoptera—I have for exchange first-class *Catocala epione, lacrymosa, paulina, evelina, retecta, luctuosa, flebilis, robinsonii, curvata, obscura, residua, insolabilis, angusi, lucetta, ultronia, innubens, hinda, scintillans, nebulosa, palaeogama, anida, phalanga, habilis, basilis, cerogama, parta* ahd others. Wish *agrippina, subviridis, californica, frenchii, portia, aspasia, rosalinda, mariana, faustina* and *aholibah.*—Ernst Schwarz, 6310 Newstead Ave., St. Louis, Missouri.

I collect for cash. Locals only. Unique field. Price lists 2 cts. *Buprestis apricans*, 25; *Bradycinetus ferrugineus*, 35; *Dynastis tityrus*, 35; *Sandalus niger* ♀, 15. Red ♂, 25; black ♂, 20, etc.—A. H. Manee, Southern Pines, N. C.

Papiliaj kokonoj, interŝanĝe. Mi deziras ricevi interŝanĝe, du specimenojn de la skarabo (*Prionus giganteus*) por kvina specoj de la pli grandaj papiliaj kokonoj de Norda Ameriko.—Howard Austin Snyder, Hermit Lane, Roxborough, Philadelphia.

Catocalae—Wanted for exchange or, preferably, cash, *sappho, marmorata* and southern and western species. Must be in fine condition.—Dr. Hermann Bosch, 25 East 65th St., New York.

Lepidoptera—I have for sale or exchange living pupae of *Papilio turnus, triolus, cresphontes; S. chersis, luscitosa, modesta, quinquemaculata, achemon, undulosa, cecropia, polyphemus, promethia*, and many others as well as imagos. Want pupae of others not in my collection.—John Kythica, 1347 S. Scoville Ave., Oak Park, Ill., U. S. A.

Lepidoptera—Catocala wanted, particularly *sappho* and *marmorata*.—Dr. Hermann Bosch, 25 East 65 St., New York.

Wanted—For cash or exchange, pupae of all Sphingidae and Saturnians, also ova of Catocalae. Offer many rare North American and European Lepidoptera.—J. McDunnough, Decatur, Ill.

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Coleoptera—Would like to correspond with beginners with view to exchanging Coleoptera. List sent on application. A few exotics on hand.—Wirt Robinson, West Point, N. Y.

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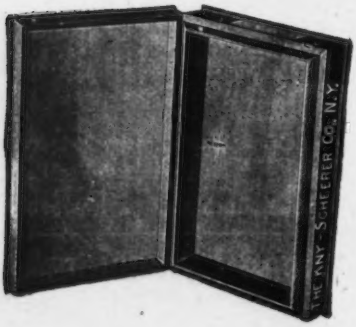

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